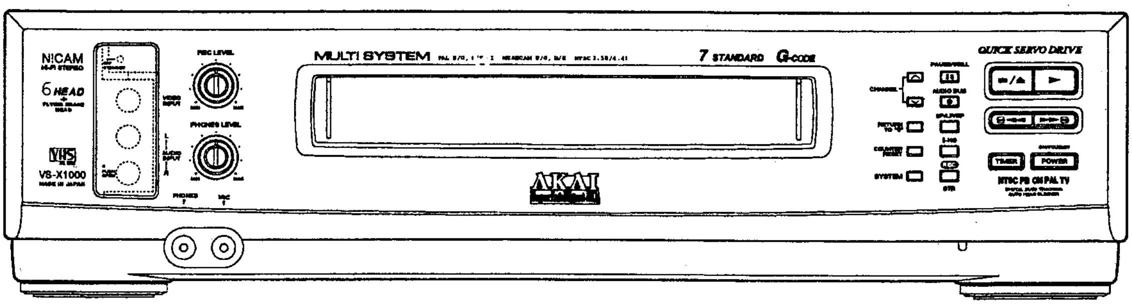
AKAI SERVICE MANUAL


NICAM
6 HEAD
VHS
VS-X1000
REC LEVEL
PHONES LEVEL
MULTI SYSTEM
7 STANDARD G-CODE
AKAI
QUICK SERVO DRIVE
TIMER
POWER
NTSC PB ON PAL TV

MODEL VS-X1000EGN-N

HQ
HIGH QUALITY

VHS
PAL SECAM NTSC

Hi•Fi

G-CODE

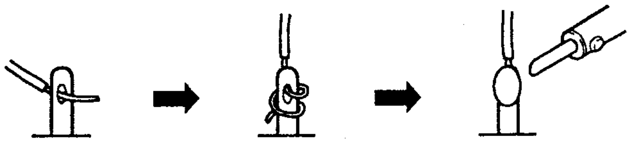
VIDEO CASSETTE RECORDER

MODEL VS-X480EGN
MODEL VS-X800EGN-N
MODEL VS-X1000EGN-N

★ SAFETY INSTRUCTIONS

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ (*) symbol are critical for safety. Replace them only with the parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with the specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts.
   Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (insulating barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing micro switches
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap the ends of the wires securely around the terminals before soldering.



6. Make sure that wires do not contact heat producing parts (heat sinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Make sure that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

SAFETY CHECK AFTER SERVICING

After servicing, make measurements of leakage-current or resistance in order to determine that exposed parts are acceptably insulated from the supply circuit.
The leakage-current measurement should be done between accessible metal parts (such as chassis, ground terminal, microphone jacks, signal input/output connectors, etc.) and the earth ground through a resistor of 1500 ohms paralleled with a 0.15 µF capacitor, under the unit's normal working conditions.
The leakage-current should be less than 0.5 mA rms AC.
The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch (if included) "ON". The resistance should be more than 2.2 M ohms.

MAKE YOUR CONTRIBUTION TO PROTECT THE ENVIRONMENT

Used batteries with the ISO symbol for recycling as well as small accumulators (rechargeable batteries), mini-batteries (cells) and starter batteries should not be thrown into the garbage can.
Please leave them at an appropriate depot.

★ SPECIFICATIONS

Format	VHS standard
Video recording system	Rotary, slant azimuth two-head helical scan system
Rotary heads	
VS-X480EGN	DX4 video head
VS-X800EGN-N	4 video heads & 2 audio heads
VS-X1000EGN-N	4 video heads, 2 audio heads & 1 FE (flying erase) head
RF input	
System B/G	
(W. Europe ch)	VHF : ch 2 - 4, 5 - 12 (including Ireland A ch) UHF : ch 21 - 69 Cable : ch S1' - S3', S1 - S20
System D/K (OIRT ch)	VHF : ch 1 - 12 UHF : ch 21 - 69
System I (U.K ch)	UHF : ch 21 - 69
System M (U.S.A ch)	VHF : ch 2 - 6, 7 - 13 UHF : ch 14 - 78 Cable : ch A6 - A1, A - I, J - V
(Japan ch)	VHF : ch 1 - 3, 4 - 12 UHF : ch 13 - 62
Stereo system	
(except VS-X480EGN)	NICAM (H.K.)
RF output	System G, K, I, M type modulation
(PAL, SECAM)	UHF ch 30 - 39 adjustable (preset: ch 36)
(NTSC)	UHF ch 26 - 38 adjustable (preset: ch 34)
Recording (line input)	
VS-X480EGN	PAL, SECAM / MESECAM NTSC 3.58
VS-X800, X1000EGN-N	PAL, SECAM (recorded as MESECAM) NTSC 3.58
Playback (line output)	
VS-X480EGN	PAL, SECAM (SECAM or MESECAM tape) NTSC 3.58, NTSC 4.43
VS-X800, X1000EGN-N	PAL, SECAM (MESECAM tape) NTSC 3.58, NTSC 4.43
Video	
Line input level	0.5 - 2.0 Vp-p / 75 ohms, unbalanced
Line output level	1.0 Vp-p / 75 ohms, unbalanced
S/N ratio	More than 45 dB (SP mode)
Horizontal resolution	
PAL	More than 240 lines
SECAM (MESECAM)	More than 220 lines
NTSC	More than 210 lines

Audio	
VS-X480EGN	
Line input level	–6 dBs / 50 k ohms, unbalanced
Line output level	–6 dBs / 1 k ohms, unbalanced
S/N ratio	More than 40 dB
Frequency response	70 - 10,000 Hz (SP mode)
VS-X800, X1000EGN-N	(VHS Hi-Fi : 2 ch, Linear :1 ch)
Line input level	–6 dBs / 50 k ohms, unbalanced
Line output level	–6 dBs / 1 k ohms, unbalanced
S/N ratio	More than 75 dB (VHS Hi-Fi)
Frequency response	20 - 20,000 Hz (VHS Hi-Fi)
Wow & Flutter	Less than 0.005 % WRMS (VHS Hi-Fi)
Recording / Playback time	
CCIR SP mode	240 min. with E-240 cassette
LP mode	480 min. with E-240 cassette
NTSC SP mode	160 min. with T-160 cassette
EP mode	480 min. with T-160 cassette
Tape speed	
CCIR SP mode	23.39 mm / sec
LP mode	11.695 mm / sec
NTSC SP mode	33.35 mm / sec
EP mode	11.12 mm / sec
Quick finder	
CCIR	Approx. 7 times normal speed
NTSC	Approx. 5 times normal speed
FF, RWD time	Approx. 2 min. with E-180 cassette
Timer	
Program	8 programs / 1 year and OTR
Clock reference	Quartz crystal
Display	TV screen & FLD (Tape counter, Timer, etc.)
Power requirements	110 - 240 V AC, 50 / 60 Hz
Power consumption	
VS-X480EGN	23 W
VS-X800EGN-N	25 W
VS-X1000EGN-N	30 W
Operating temperature	5°C - 40°C
Dimensions	
VS-X480, X800EGN-N	425(W) x 95(H) x 276(D)mm
VS-X1000EGN-N	425(W) x 109(H) x 283(D)mm
Weight	
VS-X480EGN	4.0 kg
VS-X800EGN-N	4.4 kg
VS-X1000EGN-N	4.8 kg

Accesories

Operator's manual	1
Remote control unit	1
Batteries for remote control	
VS-X480EGN	2
VS-X800, X1000EGN-N	3
RF cord	1
AC cord	1
AC plug adaptor	1 (Y6 version only)

0 dBs = 0.775 VRMS

∗ For improvement purposes, specifications and design are subject to change without notice.

∗ G-CODE IS A TRADEMARK APPLIED FOR BY GEMSTAR DEVELOPMENT CORP.
G-CODE SYSTEM IS MANUFACTURED UNDER LICENCE FROM GEMSTAR DEVELOPMENT CORPORATION.

★ INFORMATION

SYMBOLS FOR PRIMARY DESTINATION

Unit destinations are indicated with letters as shown below.

Symbol	Power Classification	Primary destination	TV System		
			Color	VHF	UHF
EA	S	Australia	PAL	B	G
EDG	E	East Europe	PAL	B, D	G, K
EDI	E	China	PAL	D	K, I
	Y6	Hong Kong			
EK	B	England	PAL	–	I
EM	E	Middle East, South-East Asia	PAL	B	G
	Y7	Saudi Arabia			
EO	V	Italy	PAL	B	G
EOH	E	North Europe	PAL	B	G
	S	New Zealand			
	Y1	Holland, Belgium, Spain			
	Y2	Spain			
EOG	V	Germany, Austria	PAL	B	G
ES	E	South Africa, Ireland	PAL	I	I
	Y6	Hong kong			
EGN	E	South East Asia	PAL, NTSC, SECAM	B, D, M	G, K, I, M
	Y1	France			
	Y2	South East Asia, UAE			
	Y6	Hong Kong			
	U5	Hong Kong			
SEG	E	France	SECAM	L, B	L, G
SK	E	Latin America, Oceania	SECAM	D	K

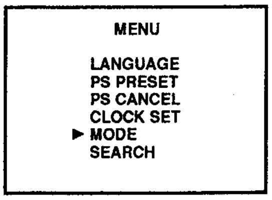
MULTI FUNCTION MENU MODE

This is an on-screen display of the various modes you can programme via the TV screen.

LANGUAGE : To select a language for the on-screen displays.
PS PRESET : To preset TV stations.
PS CANCEL : To cancel preset TV stations.
CLOCK SET : To set the clock.
MODE : To select the SPEED (tape speed), OSD (on screen display), AV MUTE, STEREO (AUTO/MONO) and AUTO OFF modes.
※ NOTE ; STEREO selection is not available on VS-X480EGN model.
SEARCH : To select the BLANK SEARCH and INTRO SCAN modes.

If necessary, refer to the respective sections in the operator's manual for detailed information.

1. Press the "MENU" button on the remote control unit. The menu list screen will be displayed on the TV screen.



MENU

LANGUAGE
PS PRESET
PS CANCEL
CLOCK SET
▶ MODE
SEARCH

2. Select the desired menu by setting the arrow indicator to the appropriate position with the cursor "∧" or "∨" button.
   The arrow indicator moves upwards each time when the "∧" cursor button is pressed. Pressing the "∨" cursor button will move the arrow indicator downwards.
3. Press the "OK" button.
   The selected menu screen will be displayed on the TV screen.
4. Select the desired mode (or function) by setting the arrow indicator to the appropriate position with the cursor "∨" or "∧" button. The number of the modes (or functions) depends on the sort of the menu.
5. Set the each mode (or function) by pressing the "∨" or "∧" cursor button and ">" or "<" cursor button.
6. Press the "OK" button.
   The selected menu screen will be disappeared few seconds after the "OK" button is pressed. This means the setting has been completed correctly.

MANUAL TRACKING/PICTURE/STABILITY ADJUSTMENT

Using the remote control, the VCR can be adjusted for tracking and picture sharpness anytime during the playback mode.

- Manual tracking control
  Press the "<" or ">" cursor button repeatedly until the picture is clear. During manual tracking adjustment, the tracking position is shown on the TV screen, and disappears automatically after adjustment has been completed. Use this function when performing the A/C HEAD phase adjustment.
- Picture sharpness control
  Press the "⋀" button repeatedly to sharpen the picture or press the "⋁" button to soften the picture.
- Stability adjustment

1) To correct picture shake during the slow motion or still mode:
   Press the "⋀" or "⋁" cursor button repeatedly until the picture shake is corrected.
2) To correct tracking during the still mode:
   Press the "<" or ">" cursor button repeatedly until the picture is clear.

ERROR ANNOUNCEMENT

When a malfunction occurs, the following error indicators appear on the FL display to indicate the problem when the power is turned off.

Err 1 = AL power supply has short circuited.
Err 2 = The loading motor has been stopped irregularly. (When the mechanism position detect switch is not able to read the specified code, that is to say not able to reach to the specified position within the specified time.)
Err 3 = The drum motor has been stopped. (When the drum motor does not rotate due to condensation, etc.)
Err 5 = The capstan motor has been stopped. (When the capstan motor does not rotate.)

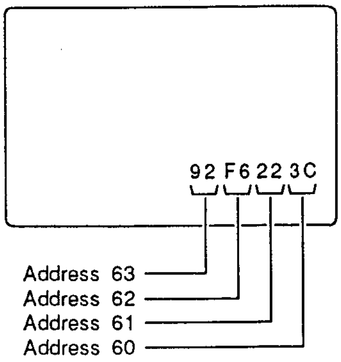
PRESETS IN THE TEST MODE

1) Engaging the "TEST MODE"

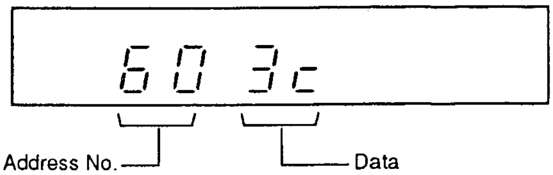
To set the VCR to the TEST MODE, press the "reset" button on the front panel first then plug in the AC power cord while pressing and holding both the "POWER" and "STOP/EJECT" buttons on the front at the same time. Next, release your fingers from both the buttons a few seconds later and press the "POWER" button.

2) Version code preset

1. Engage the "test mode". The version (model) code will be displayed on the lower right part of the screen in 8 digit form.



2. While pressing both the "FF" and "RWD" buttons, press the "RESET" button. The address and its data will be shown in the FL display. (Keep pressing the "FF" and "RWD" buttons until version code apppears.)



3. Select the address "60" by pressing the "FF" or "RWD" button.
4. Choose the data in the address 60 column that corresponds to the model number you are working on from the following list. Set the chosen data value by pressing the "STOP" or "PLAY" button.

MODEL	MODEL CODE	ADDRESS			
		60	61	62	63
VS-X480EGN	10C201AC	Ac	06	c4	10
VS-X800EGN-N	90D6102C	2c	10	d6	90
VS-X1000EGN-N	92F6223C	3c	22	F6	92

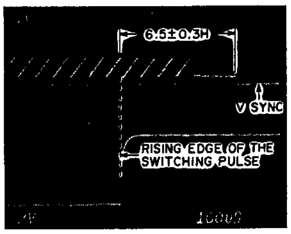
5. Memorize the data into the EEP ROM IC by pressing the "REC" button.
6. The address "61" and its data will be shown in the FL display. Repeat the presetting (steps 4 to 5) for addresses "61", "62" and "63" in the same manner as address "60".
7. Press the "RESET" button to disengage the version (model) code preset mode.

NOTE : This version code preset is absolutely necessary when the IC402 (EEP-ROM) on the MAIN PCB is replaced.

3) Video switching point preset

1. Engage the "test mode".
2. Connect CH-1 of an oscilloscope to VIDEO OUT and CH-2 to the TP1 (SWP) on the PRE AMP PCB (for VS-X480EGN) or PRE AMP & Hi-Fi PCB for VS-X800/X1000EGN-N) for triggering.
3. Play back the reference tape TF-530RFS (AT-751775) and press the "REC" button during playback.

4. Confirm that the switching point is positioned 6.5 ±0.3 H before the left edge of the V-sync as shown.



NOTE : This switching point preset is absolutely necessary when conditions are as follows.

- When the video head drum (upper drum) is replaced.
- When the DRUM MOTOR PCB or DRUM MOTOR's ROTARY MAGNET (ROTARY PLATE) is replaced.
- When the SERVO/SYSCON MI-COM or EEP ROM IC (IC402) on the MAIN PCB is replaced.

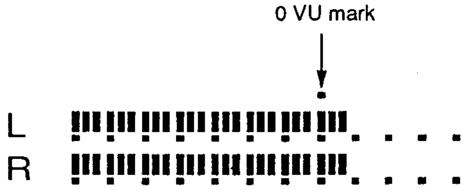
4) Memorization of the reference RF envelope detect voltage (I-HQ)

For the purpose of the correct operation of the I-HQ tape tuning system, memorization of the reference RF envelope detect voltage is absolutely necessary. When the VIDEO HEAD DRUM, PRE AMP PCB (or PRE AMP & Hi-Fi PCB) or EEP ROM IC (IC402) on the MAIN PCB is replaced for any reason, memorize the reference RF envelope detect voltage according to the following procedure.

1. Engage the test mode.
2. Set the tape speed to "SP mode" and color mode to "PAL".
3. Insert the I-HQ test tape "TF-556AT" (AT-751822J) and then perform tape tuning by pressing both the "I-HQ" and "REC" buttons simultenuously.
4. Make a recording on the I-HQ test tape for more than 1 minute and then rewind it to the point where the recording was started.
5. Play back the tape. Reference RF envelope detect voltage data in the memory is displayed in 2 digits in the hours display part of the FL display and the present envelope detect voltage data is displayed in 2 digits in the minutes display part (the data is displayed in hexadecimal numbers).
6. After the auto tracking has been activated, press the "CANCEL" button on the remote control unit. So present RF envelope detect voltage data will be transferred to the hours part's 2 digits and memorized in the EEP ROM IC.
7. Next, set the tape speed to "LP mode" and repeat the steps 3 to 5.
8. Set the color mode to "NTSC" and repeat the steps 3 to 6 on both the "SP mode" and "LP mode".
9. Terminate the test mode.

5) Audio level meter sensitivity preset (X800/X1000EGN-N only)

1. Engage the test mode and press the "POWER" button.
2. Input a 1 kHz, –6.0 dBs sinewave signal to the AUDIO INPUT terminal and connect an AC milli-voltmeter to the AUDIO OUT terminal.
3. Set the REC LEVEL volume on the FRONT PANEL at the centre position. Next, adjust the output level of the AUDIO SIGNAL GENERATOR so that L-CH output level is –6.0 dBs. Confirm that the R-CH output level is –6.0 ±1.0 dBs at this point.
4. Press the display control button on the remote control unit until the audio level meter appears on the TV screen.
5. Press both the "▶▶" and "◀◀" buttons on the front panel at the same time. A –6.0 dBs level will be referenced by the micro computer. The micro computer determines bar meter sensitivity according to this level. Change the AUDIO SIGNAL GENERATOR output slightly and confirm that both the bar meter's 0 VU position on the TV screen and bar meter's 0 dB position on the FL display turn on when the L-CH output is reached –6.0 dBs.



6. If the result is not satisfactory, repeat steps 3 to 5.

6) Other facilities in the test mode

1. Tracking position display

In the "SP play" mode, tracking position data can be displayed on the FL display. Data is displayed in 64 steps in hexadecimal numbers from "00" to "3F" in the seconds display part on the FL display (seconds display part of the OTR's stop time for VS-X1000EGN-N). Pressing the "TV/VCR" button on the remote control unit during playback directly sets the tracking to the maximum "3F" position and pressing the "COUNTER RESET" button sets it to the minimum "00" position.

Pressing the "PLAY" button during playback sets tracking to the center position "1F" automatically. If "1F" does not appear even when the "PLAY" button is pressed, keep pressing the "<" or ">" cursor button on the remote control unit until "1F" is indicated and then press the "OK" button to memorize the position.

2. TIMER function confirmation

During the "test mode", the clock's minute part is advanced by a second when the power is turned off. This means that the "timer" function can be confirmed in a short time.

3. Suspension of the tape protection system

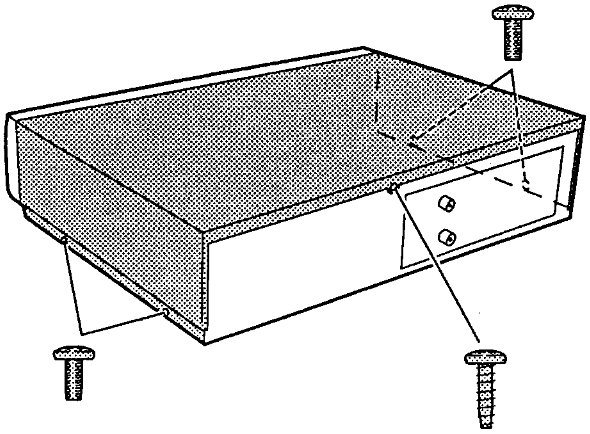
When the VCR is not in the "test mode", the "REC PAUSE" mode will be released after 30 minutes in order to protect the tape. The "STILL" mode will also be released after 5 minutes. During the "test mode", however this tape protection system will not operate.

※ Video head rotation will stop 5 min. after the "REC PAUSE" mode has been engaged even during the test mode.

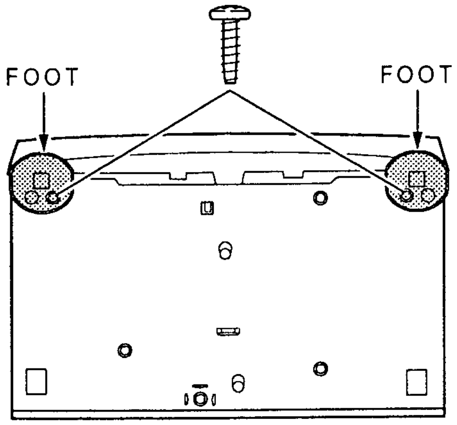
I. DISASSEMBLY

In case of trouble, etc., necessitating dismantling, please dismantle in the order shown in the illustrations. Reassemble in the reverse order.

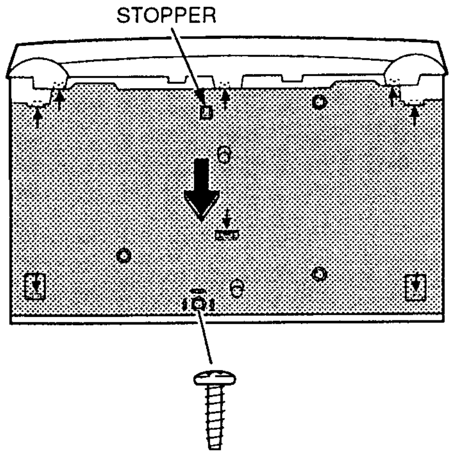
1. Removal of UPPER COVER



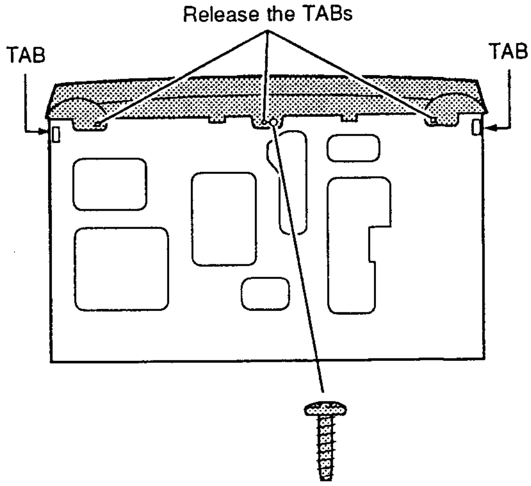
2. Removal of BOTTOM COVER
   Remove the two FOOTs.

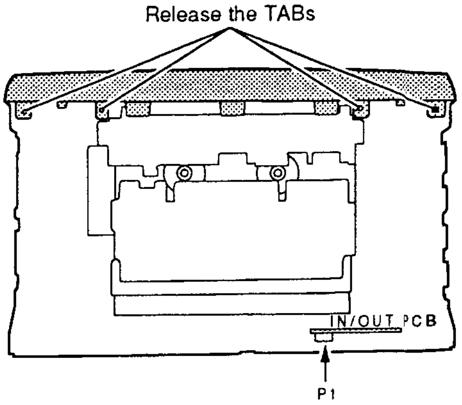


While pressing the stopper downward, slide the Bottom cover in the direction of the arrow for removal.
When replacing the Bottom cover, make sure it is secured with the tabs.



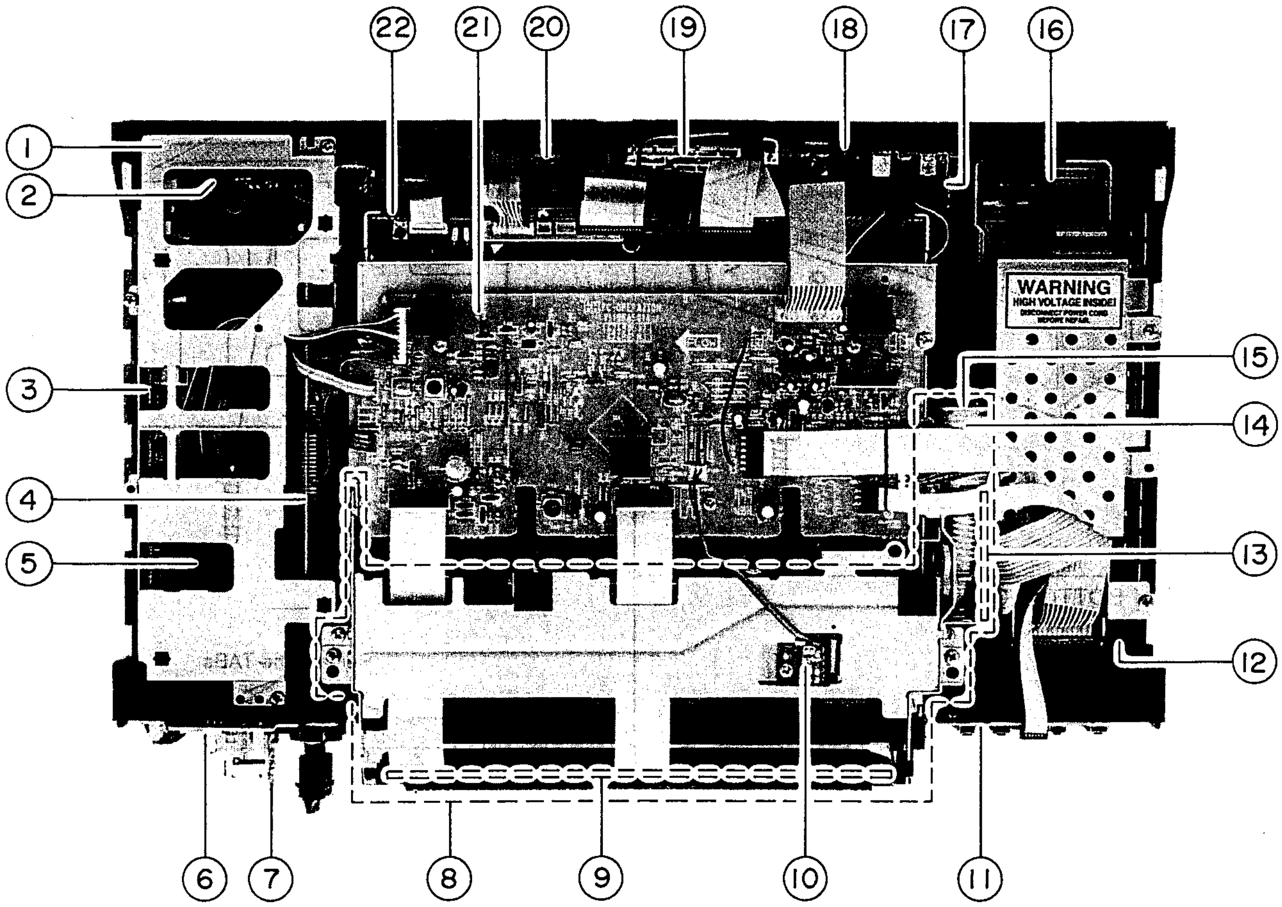
3. Removal of FRONT PANEL


Release the TABs
TAB
TAB


Release the TABs
IN/OUT PCB
P1

[VS-X480EGN, X800EGN-N]
Disconnect the P1 connector on the IN/OUT PCB before removal.

II. PRINCIPAL PARTS LOCATION



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16
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12
WARNING
HIGH VOLTAGE INSIDE!
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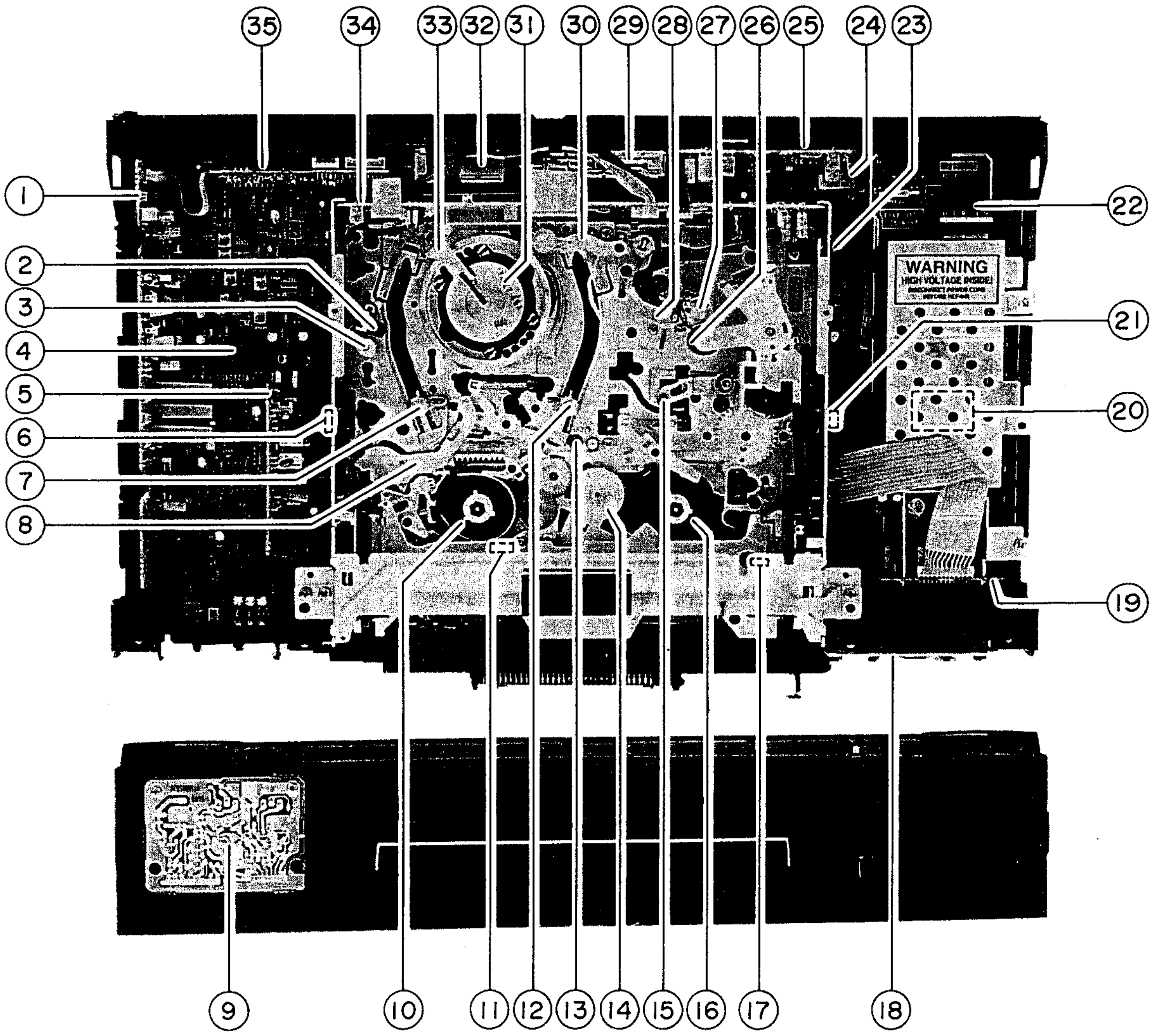
Fig. 2-1 Top view (1)

1. PCB SUPPORT	12. POWER (B) PCB
2. IN/OUT PCB	13. CAM SW PCB
3. EGN PCB	14. DOOR MOTOR
4. D-NICAM PCB	15. DOOR MOTOR PCB
5. MAIN PCB	16. POWER (A) PCB
6. FRONT PCB	17. VIF-HiFi (B) PCB
7. REMOCON PCB	18. VIF-HiFi (A) PCB
8. DOOR BLOCK	19. TUNER UNIT
9. FLD PCB (CASSETTE DOOR)	20. RF CONVERTER UNIT
10. PACK SW PCB	21. OPERATION (A) PCB
11. OPERATION (B) PCB	22. PRE AMP & Hi-Fi PCB

※ The potograph on this page is of model VS-X1000EGN-N.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WARNING
HIGH VOLTAGE INSIDE!
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Fig. 2-2 Top view (2)

1. EGN PCB
2. FULL TRACK ERASE HEAD
3. SUPPLY TAPE GUIDE
4. MAIN PCB
5. SECAM PCB
6. END SENSOR
7. SUPPLY LOADING LEADER
8. TENSION ARM
9. FRONT PCB
10. SUPPLY REEL TABLE
11. REC SAFETY SWITCH
12. TAKE UP LOADING LEADER
13. SENSOR LED
14. IDLER PART
15. REVIEW ARM
16. TAKE UP REEL TABLE
17. S-VHS TAPE DETECT SWITCH
18. OPERATION PCB
19. POWER (B) PCB
20. POWER TRANSFORMER
21. START SENSOR
22. POWER (A) PCB
23. TR PCB
24. VIF-EGN (B) PCB
25. VIF-EGN (A) PCB
26. PINCH ROLLER
27. CAPSTAN MOTOR BLOCK
28. A/C (AUDIO / CONTROL & SIDE ERASE) HEAD
29. TUNER UNIT
30. HEAD CLEANER BLOCK
31. VIDEO HEAD (UPPER) DRUM BLOCK
32. RF CONVERTER UNIT
33. EARTH BRUSH
34. PRE AMP PCB
35. IN/OUT PCB

※ The photograph on this page is of model VS-X480EGN.

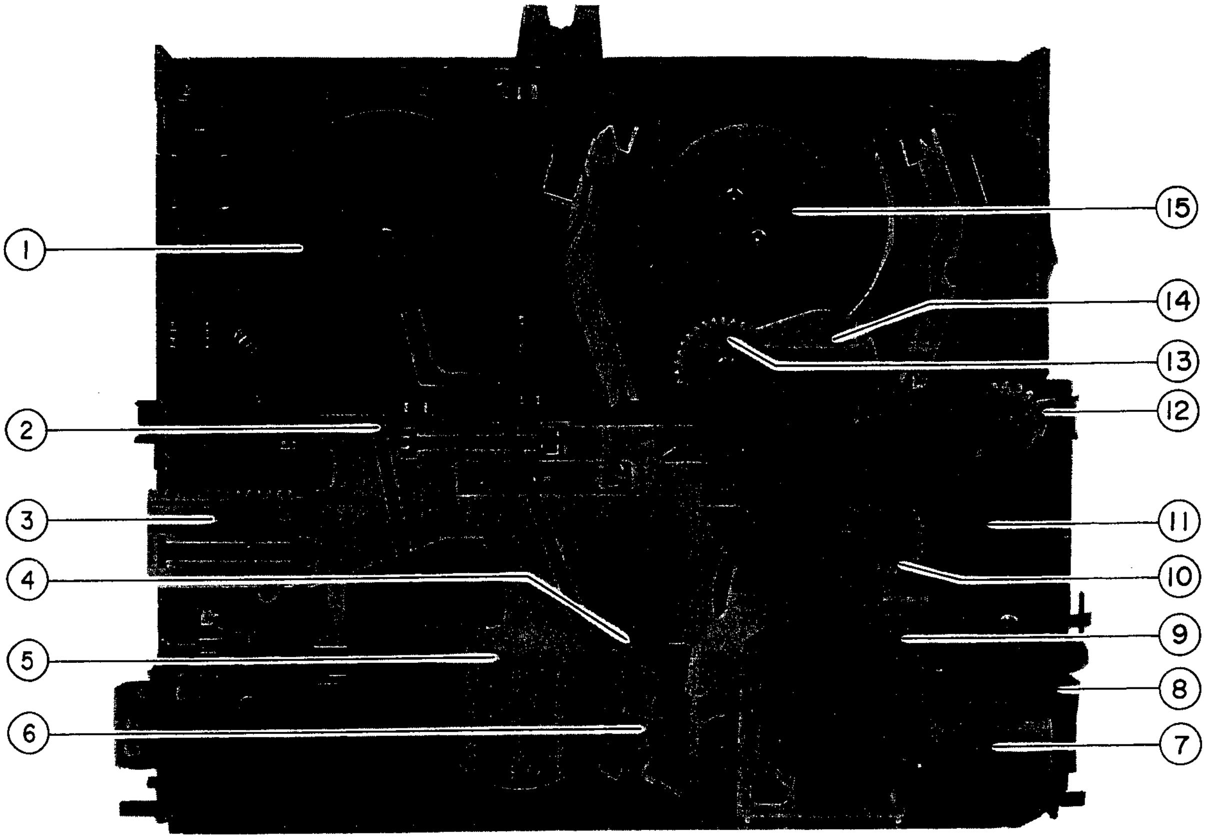


Fig. 2-3 Bottom view

1. CAPSTAN MOTOR BLOCK
2. CAPSTAN BELT
3. PINCH SLIDER
4. GEAR COUPLING BLOCK
5. CLUTCH DISK PART
6. COUPLING ARM
7. LOADING MOTOR
8. LM/MS PCB
9. LOADING DRIVE BLOCK
10. CAM SLIDER GEAR
11. MODE DETECT SWITCH
12. FRONT LOADING GEAR
13. TOGGLE (T) GEAR BLOCK
14. TOGGLE (S) GEAR BLOCK
15. DRUM MOTOR BLOCK

III. VIEWING THE OPERATION OF THE BOTTOM SIDE OF THE MECHANISM BLOCK

※ In case you want to check the operation of the bottom side of the mechanism block, proceed as follows.

[For VS-X480EGN, X800EGN-N models]

3-1. REMOVAL OF THE FRONT PANEL

1) Remove the FRONT PANEL (refer to step 1-3).

3-2. REMOVAL OF THE MECHANISM BLOCK

1) Remove the three Ⓐ screws on the bottom side as shown in Fig. 3-1.

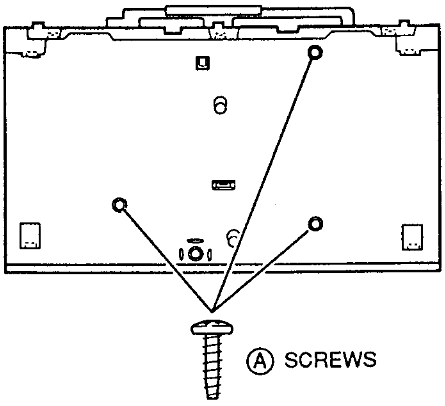


Fig. 3-1

2) Remove the two Ⓑ screws and the Ⓒ screw which retain the MECHANISM BLOCK and the EARTH PLATE as shown in Fig. 3-2.

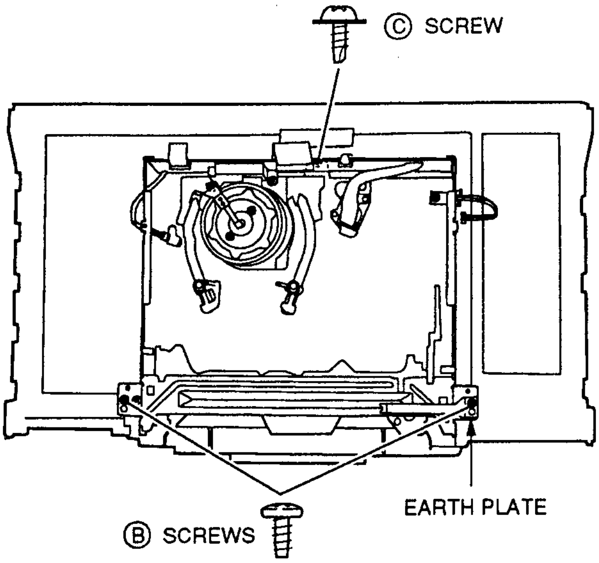


Fig. 3-2

3) Remove the MECHANISM BLOCK and place a video cassette which is no longer needed or something else that is substitutable (must be made of insulated material) on the MAIN PCB.

4) Place the MECHANISM BLOCK on the tape etc., standing it on end as shown in Fig. 3-3 with care not to damage the flat cables on the PRE AMP PCB (or PRE AMP & Hi-Fi PCB).

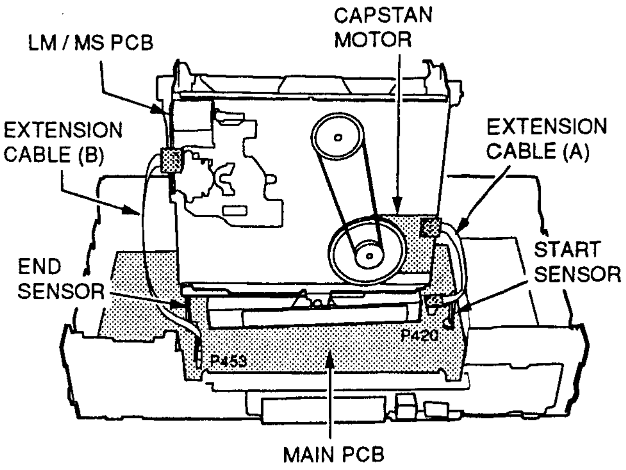


Fig. 3-3

3-3. CONNECTING THE EXTENSION CABLE

1) Connect the two extension cables (which are provided as the service jig) between the CAPSTAN MOTOR BLOCK and the P420 on the MAIN PCB, the LM/MS PCB and P453 on the MAIN PCB.

NOTE : The "FRONT" mark of the extension cable (A) PCB must be facing front when connecting.

3-4. TURNING THE POWER ON

1) Place a cover (a ball point pen's cap etc.) on the start sensor as shown in Fig. 3-3 in order to intercept the light to the sensor. The cap must be black or metal.
2) Engage the test mode (refer to in the information section, "PRESETS IN THE TEST MODE").
3) Remove the cover on the start sensor immediately after the cassette tape is inserted in the ejector so that the tape is drawn down automatically.
4) Cover both the start and end sensors at the same time with the covers right before the cassette tape reaches the lower position.
Although the reel pulse is not generated, any modes except "REC" mode can be operated in this condition.
5) In case you want to change the tape, eject the present tape by pressing the "EJECT" button then remove the cover on the end sensor and repeat the steps 3) to 4).

[For VS-X1000EGN-N model]

3-1. REMOVAL OF THE FRONT PANEL

1) Remove the FRONT PANEL (refer to step 1-3).

3-2. LOADING A CASSETTE TAPE

1) Connect the AC power cord to the VCR and insert a tape. And then disconnect the power cord after the tape has been loaded onto the VIDEO HEAD DRUM.

3-3. REMOVAL OF THE MECHANISM BLOCK

1) Remove the three Ⓐ screws on the bottom side as shown in Fig. 3-4.

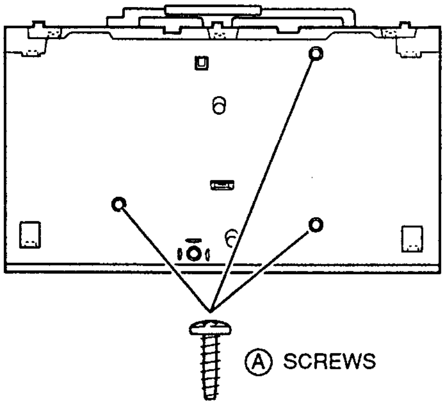


Fig. 3-4

2) Remove the two Ⓑ screws and the Ⓒ screw which retain the MECHANISM BLOCK as shown in Fig. 3-5.

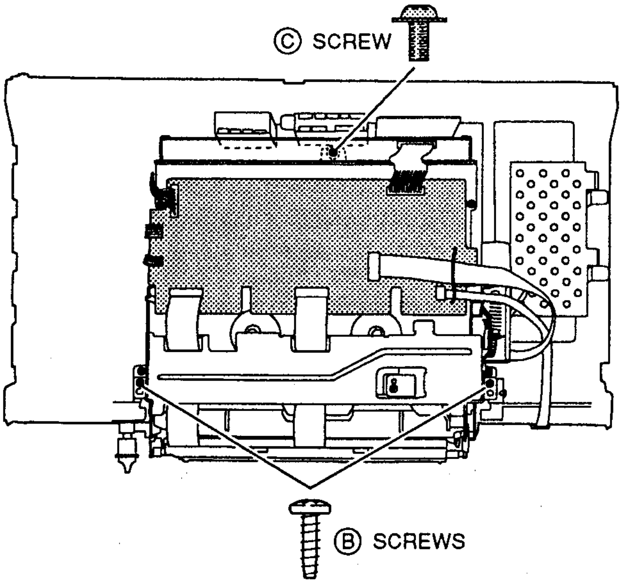


Fig. 3-5

3) Remove the MECHANISM BLOCK and place a video cassette which is no longer needed or something else that is substitutable (must be made of insulated material) on the MAIN PCB.

4) Place the MECHANISM BLOCK on the tape etc., standing it on end as shown in Fig. 3-6 with care not to damage the flat cables on the PRE AMP & Hi-Fi PCB.

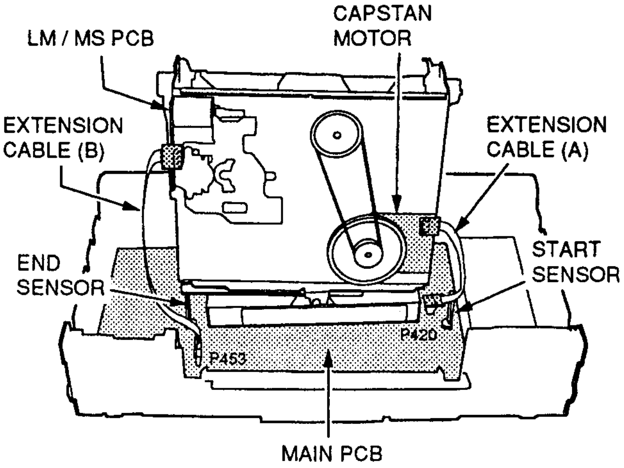


Fig. 3-6

3-4. CONNECTING THE EXTENSION CABLE

1) Connect the two extension cables (which are provided as the service jig) between the CAPSTAN MOTOR BLOCK and the P420 on the MAIN PCB, the LM/MS PCB and P453 on the MAIN PCB.

NOTE : The "FRONT" mark on the extension cable (A) PCB must be facing front when connecting.

3-5. TURNING THE POWER ON

1) Engage the test mode (refer to in the information section, "PRESETS IN THE TEST MODE").
2) Normal playback and CUE, REVIEW modes can be operated in this condition.

NOTE : Once the tape has been ejected, it is not possible to re-insert the tape in this condition. Never press the stop button twice at one time except you want to eject the tape. If the tape is ejected, and you still want to check the operation, repeat the steps 3-2 to 3-5.

IV. DISASSEMBLY OF THE MAIN COMPONENTS

4-1. REMOVAL OF THE MECHANISM BLOCK

NOTE : Some parts in the mechanism block require complete removal of the mechanism block from the chassis when performing servicing.
Set the loading mechanism to the "EJECT" position by pressing the EJECT button. Then disconnect the AC power plug from the AC socket before proceeding.

4-1-1. Removal of the FRONT PANEL BLOCK

1) Remove the FRONT PANEL BLOCK (refer to step 1-3 on page 7)

4-1-2. Turning the OPERATION (A) PCB (VS-X1000EGN-N only)

1) Disconnect the P32 connector on the OPERATION (A) PCB.
2) Remove the two Ⓐ screws and then turn the OPERATION (A) PCB to the forward direction as shown in Fig. 4-1.

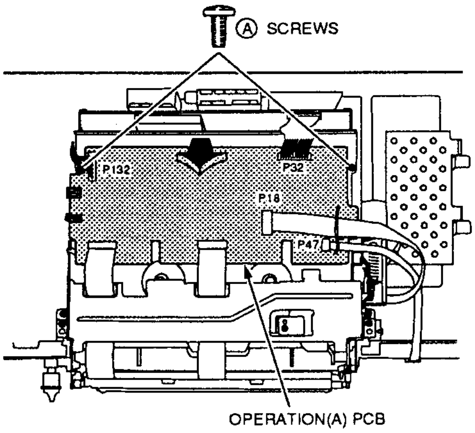


Fig. 4-1

4-1-3. Removal of the PRE AMP & Hi-Fi PCB (or PRE AMP PCB for VS-X480EGN model)

1) **[For X480EGN model]**
Disconnect the two flat cables from the P1 and P2 connectors respectively and then disconnect the P102 and P103 connectors.

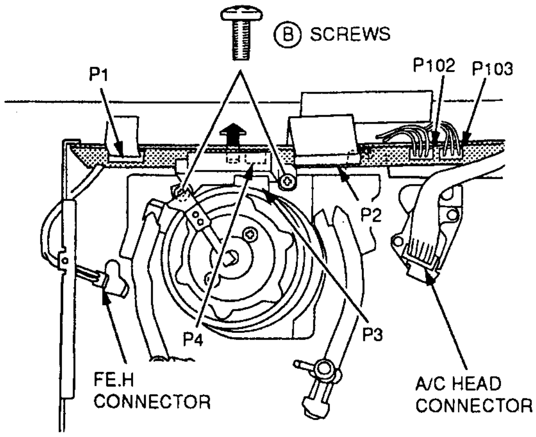


Fig. 4-2

[For VS-X800, X1000EGN-N models]
Disconnect the three flat cables from the P1, P101 and P102 connectors respectively and then disconnect the P103, P104, P105 and P106 connectors.

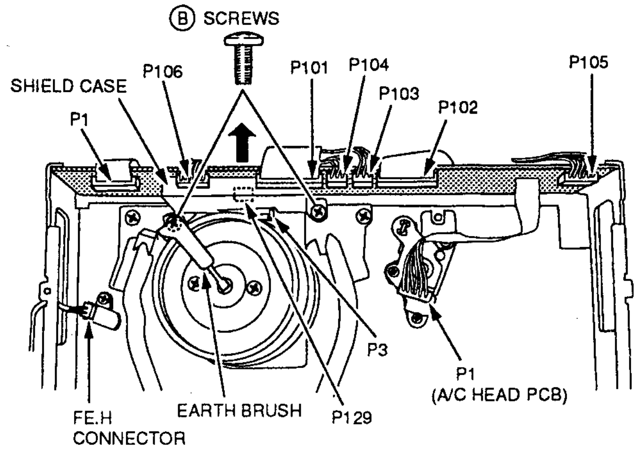


Fig. 4-3

2) Disconnect the P1 connector on the A/C HEAD PCB.
3) Disconnect the connector on the FULL TRACK ERASE HEAD (except VS-X1000EGN-N model).
4) Remove one of the Ⓑ screw and remove the EARTH BRUSH.
5) Remove the other Ⓑ screw, then press the lower side of the shield case in the direction of the arrow as shown in Fig. 4-2 or 4-3.
6) Proceed in the reverse order for installation. Carefully align the connectors between the one on the DRUM MOTOR PCB, one on the LOWER DRUM and P129 (or P4), P3 connectors on the PRE AMP & Hi-Fi PCB (or PRE AMP PCB) when re-attaching.
To make insertion easier, remove the two mechanism block retaining screws on the bottom as shown in Fig. 4-4 and the Ⓔ screw shown in Fig. 4-6 or 4-7 and then while pulling the back part of the mechanism block upward, connect the connectors properly.

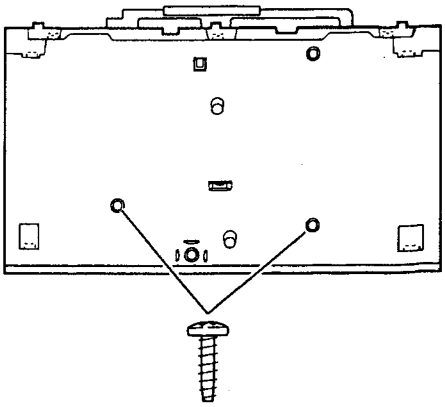


Fig. 4-4

4-1-4. Removal of the TR PCB

1) Remove the Ⓒ transistor retaining screw, then remove the TR PCB from the MECHANISM BLOCK.

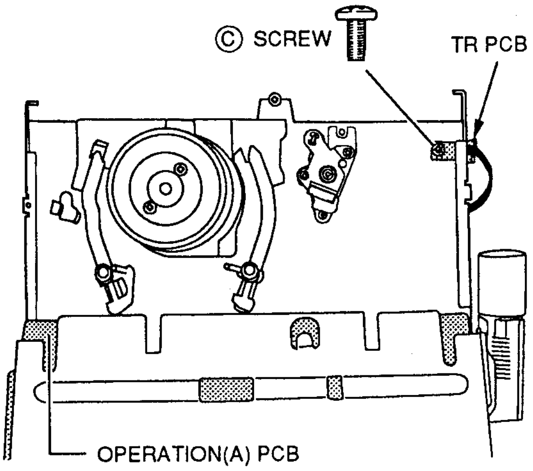


Fig. 4-5

4-1-5. Removal of the MECHANISM BLOCK

1) Disconnect the two flat cables from the P18 and P47 connectors on the OPERATION (A) PCB respectively as shown in Fig. 4-1.
2) Disconnect the P32 and P48 connector on the FRONT PCB.
3) Disconnect the P614 connector on the MAIN PCB.

NOTE: Step 1) to 3) are for VS-X1000EGN-N model only.

4) Remove the three retaining screws on the bottom (refer to Fig. 3-1 on page 11).
5) Remove the two Ⓓ screws and the Ⓔ screw which retain the MECHANISM BLOCK as shown in Fig. 4-6 or Fig. 4-7.

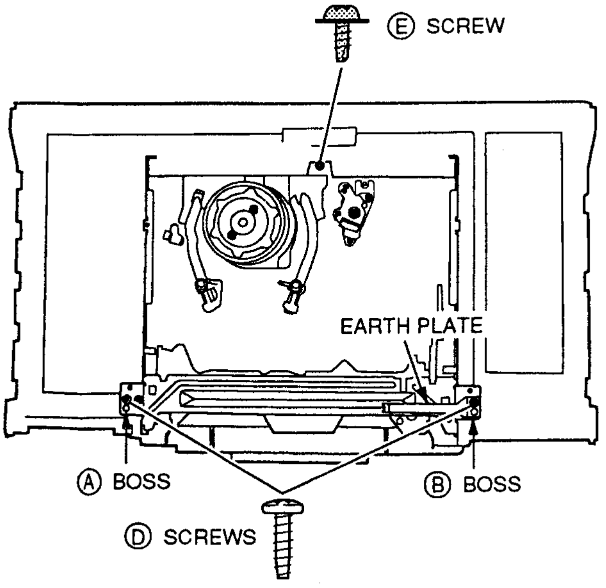


Fig. 4-6 (except VS-X1000EGN-N)

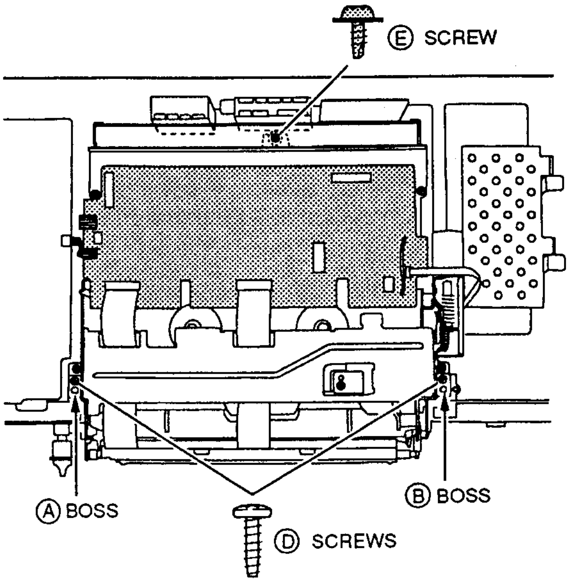


Fig. 4-7 (VS-X1000EGN-N)

6) Pull up the MECHANISM BLOCK carefully for detaching it from the chassis and the MAIN PCB.

4-1-6. Installation of the MECHANISM BLOCK

1) Carefully align the Ⓐ and Ⓑ bosses on the chassis with their corresponding holes on the MECHANISM BLOCK and then tighten the three screws (refer to Fig.4-6 or 4-7).
2) Proceed in the reverse order of 4-1-1 to 4-1-5 for installation.

4-2. REMOVAL OF THE DOOR BLOCK (VS-X1000EGN-N only)

4-2-1. Removal of the DOOR BLOCK

1) Remove the MECHANISM BLOCK (refer to 4-1).
2) Remove the two Ⓐ screws on the DOOR BLOCK.
3) Disconnect the connector on the FULL TRACK ERASE HEAD.
4) Carefully remove the DOOR BLOCK from the MECHANISM BLOCK.

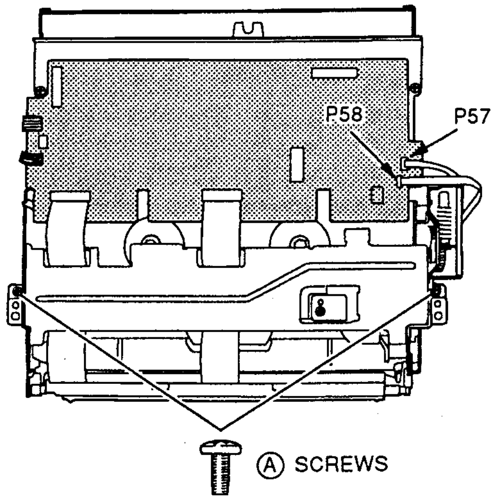


Fig. 4-8

4-2-2. Replacement of the DOOR MOTOR

1) Disconnect the P57 and P58 connectors on the OPERATION (A) PCB.
2) Remove the Ⓑ screw and remove the CAM SW PCB.

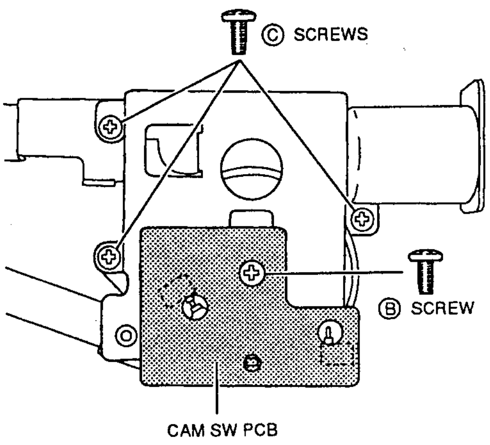

Ⓒ SCREWS
Ⓑ SCREW
CAM SW PCB

Fig. 4-9

3) Remove the three Ⓒ screws then remove the DOOR CAM BLOCK
4) Remove the two Ⓓ screws then replace the DOOR MOTOR.

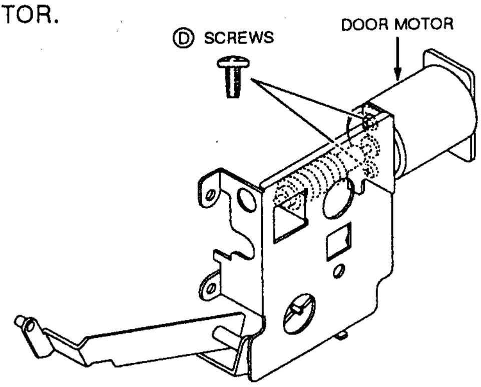

Ⓓ SCREWS
DOOR MOTOR

Fig. 4-10

5) When re-assembling, move the fan-shaped GEAR to the position that it is in when the door is fully closed, then place the CAM GEAR so that the Ⓐ line aligns with the right edge of the fan shaped gear as shown in Fig. 4-11.

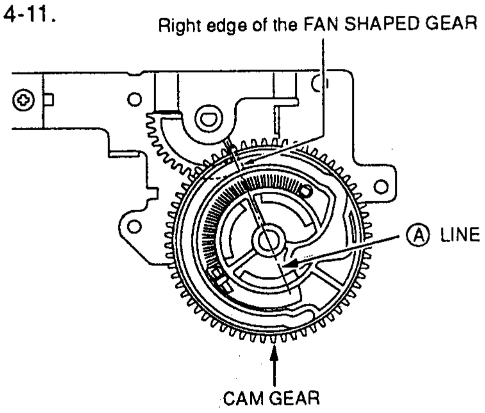

Right edge of the FAN SHAPED GEAR
Ⓐ LINE
CAM GEAR

Fig. 4-11

6) Place the CAM SW PCB at the original position. Take care not to damage the pins of the micro switches.

4-2-3. Removal of the FLD PCB

1) Disconnect the two flat cables from the P49 and P50 connectors on the OPERATION (A) PCB.

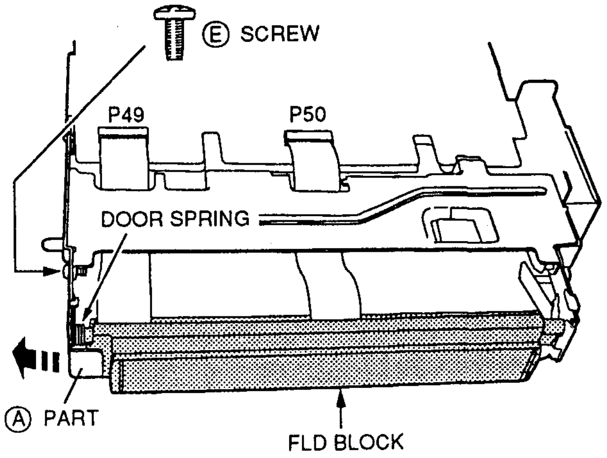

Ⓔ SCREW
P49
P50
DOOR SPRING
Ⓐ PART
FLD BLOCK

Fig. 4-12

2) Remove the Ⓔ screw and while pressing the Ⓐ part to the left gently, carefully remove the FLD BLOCK not to lose the DOOR SPRING.
3) Insert a flat head screwdriver to the gap of the FLD case (MASK CASE & MASK HOLDER) and carefully release the stoppers as shown in Fig. 4-13.

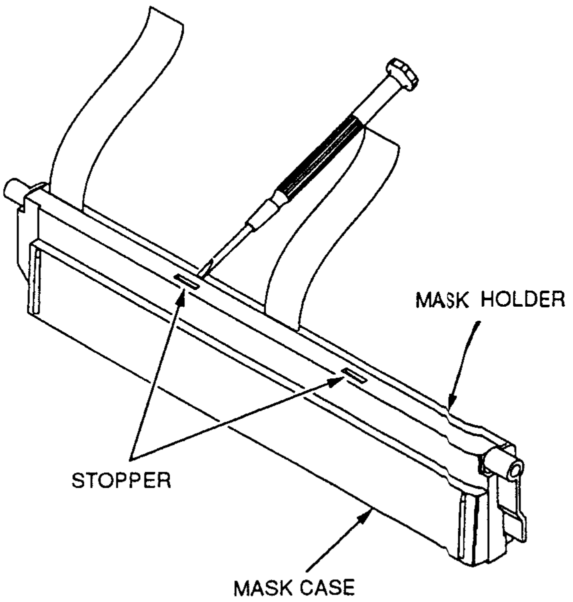

MASK HOLDER
STOPPER
MASK CASE

Fig. 4-13

4) Re-assemble in the reverse order for installation.

4-3. REMOVAL OF THE EJECTOR BLOCK

4-3-1. Removal of the CASSETTE LOAD BLOCK

1) Remove the MECHANISM BLOCK (refer to 4-1, "REMOVAL OF THE MECHANISM BLOCK").
2) Remove the DOOR BLOCK (refer to 4-2-1, "Removal of the DOOR BLOCK"). (VS-X1000EGN-N only)
3) Remove the two Ⓐ screws on the UPPER PLATE, as shown in Fig. 4-14 then remove the UPPER PLATE.

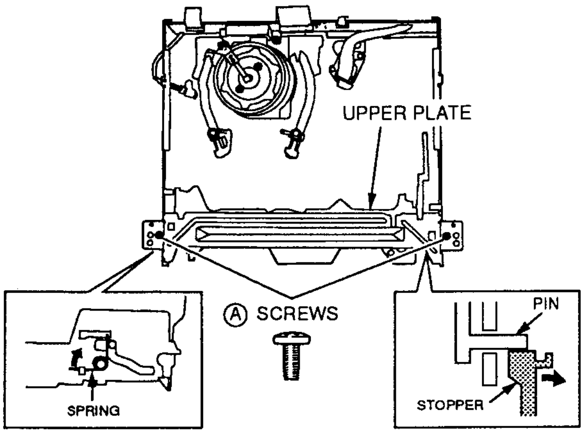


Fig. 4-14

4) Unhook the spring and remove it as shown in Fig. 4-14.
5) While pressing the right STOPPER in the direction of the arrow (refer to Fig. 4-14), gently remove the right side pin of the CASSETTE LOAD BLOCK from the rail by pulling it in the forward direction. Next, remove the left side pin in the same manner, then remove the CASSETTE LOAD BLOCK. To avoid damaging the pins of the CASSETTE LOAD BLK and the rail of the MECHA. FRAME, do not use excessive force when removing the CASSETTE LOAD BLK.

4-3-2. Removal of the LOADING ARM BLK

1) Release the stopper on the right side end of the LOADING ARM BLK's shaft (refer to Fig. 4-15) by pressing the stopper tab with a flat head (—) screwdriver. Then remove the shaft's right end from the bracket.

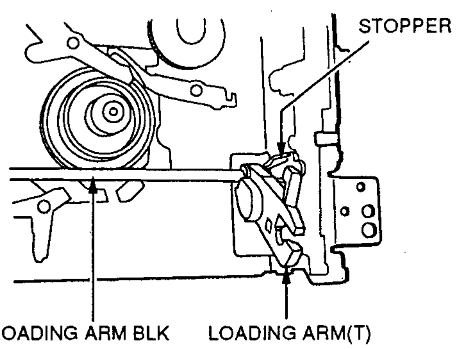


Fig. 4-15

2) Hold the LOADING ARM (T) and then pull out the shaft's left end from the bracket. Take special care when removing it to avoid damaging the pins (refer to Fig. 4-15).

4-3-3. Reassembling

1) Proceed in the reverse order of 4-3-1 to 4-3-2 for installation.

4-4. REMOVAL OF THE MODE DETECT SWITCH

Before proceeding with removal of the MODE DETECT SWITCH, the loading mechanism must be set to the "reference" position. If it has not already been set, use the following procedure to set the reference position.

※ Connect a 6V battery to the loading motor until both the cam slider gear and mode detect switch reach the reference position (refer to Fig. 4-17).

4-4-1. Removal of the MODE DETECT SWITCH

1) Unsolder the 5 leads of the mode detect switch.

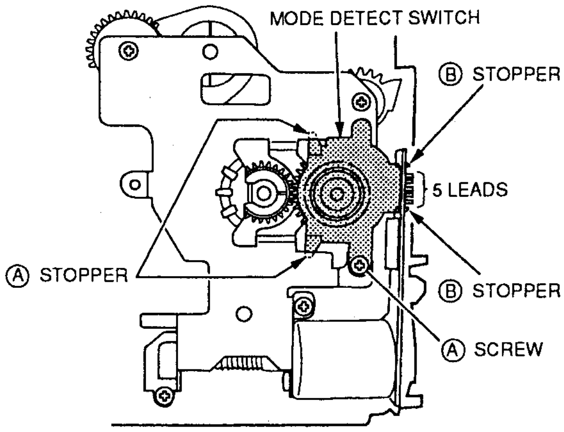


Fig. 4-16

2) Remove the Ⓐ screw.
3) While releasing the two Ⓐ stoppers and two Ⓑ stoppers, carefully remove the MODE DETECT SWITCH by pulling it up and to the left.

4-4-2. Installation of the MODE DETECT SWITCH

1) Install the mode detect switch in the reverse order of 4-4-1. When mounting the mode detect switch, align the mode detect switch's Ⓐ mark with the Ⓑ mark on the cam slider gear as shown in Fig. 4-17.

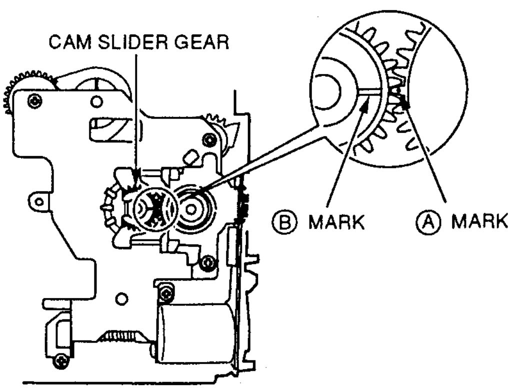


Fig. 4-17

4-5. DISASSEMBLY OF THE LOADING DRIVE BLOCK

※ Set the loading mechanism to the "reference" position. Refer to 4-4, "REMOVAL OF THE MODE DETECT SWITCH" before proceeding.

4-5-1. Removal of the LOADING DRIVE BLOCK

1) Remove the MODE DETECT SWITCH (refer to 4-4-1 "removal of the MODE DETECT SWITCH") if necessary.
2) Remove the Ⓐ, Ⓑ, Ⓒ and Ⓓ screws then remove the LOADING DRIVE BLOCK as shown in Fig. 4-18.

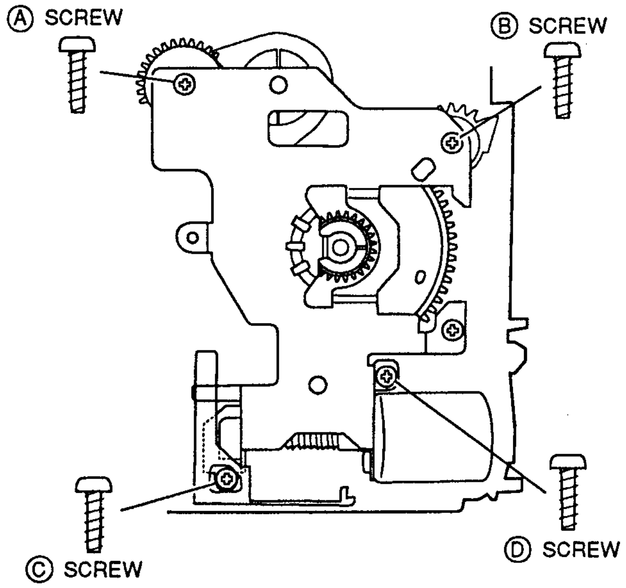

Ⓐ SCREW
Ⓑ SCREW
Ⓒ SCREW
Ⓓ SCREW

Fig. 4-18

4-5-2. Replacement of the LOADING MOTOR

1) Remove the LOADING DRIVE BLOCK (refer to 4-5-1)
2) Unsolder the two leads of the LOADING MOTOR.
3) Remove the two installation screws.

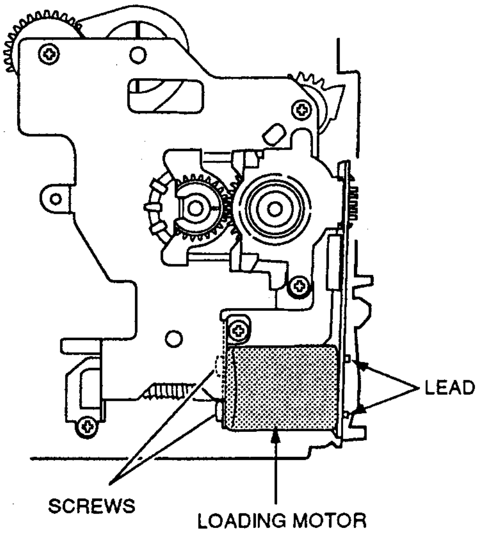

LEAD
SCREWS
LOADING MOTOR

Fig. 4-19

4) Reassemble in the reverse order for installation.

4-6. REASSEMBLY OF THE LOADING MECHANISM BLK

4-6-1. Position of the TOGGLE GEARs (T) and (S)

1) Set the TOGGLE GEARs (T) and (S) to the unloaded position with your fingers. Align the Ⓐ mark on the TOGGLE GEAR (S) with the Ⓐ hole of the TOGGLE GEAR (T) as shown in Fig. 4-20.

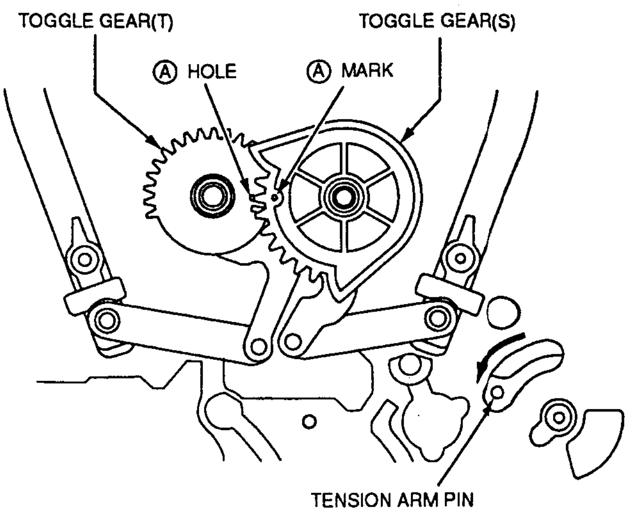

TOGGLE GEAR(T)
TOGGLE GEAR(S)
Ⓐ HOLE
Ⓐ MARK
TENSION ARM PIN

Fig. 4-20

NOTE : When positioning the TOGGLE GEAR (S), the TENSION ARM's pin should be moved in the direction of the arrow before placing the TOGGLE GEAR (S) onto its shaft.

4-6-2. Installation of the CAM SLIDER GEAR & FRONT LOADING GEAR

1) Attach the WORM WHEEL GEAR as shown in Fig. 4-21.

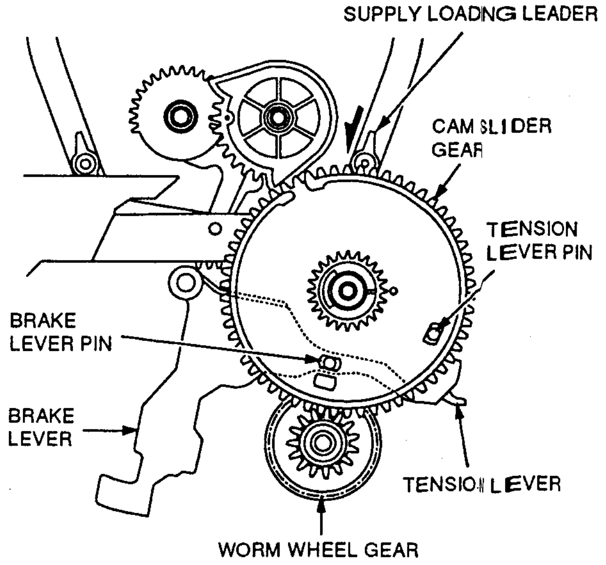

SUPPLY LOADING LEADER
CAM SLIDER GEAR
TENSION LEVER PIN
BRAKE LEVER PIN
BRAKE LEVER
TENSION LEVER
WORM WHEEL GEAR

Fig. 4-21

2) Place the CAM SLIDER GEAR on the shaft and adjust the position of the BRAKE LEVER and TENSION LEVER so that both pins appear through the holes on the CAM SLIDER GEAR as shown in Fig. 4-21. When inserting the CAM SLIDER GEAR onto its shaft, press the SUPPLY LOADING GEAR slightly in the direction of the arrow to make installation easy.
3) Attach the FRONT LOADING GEAR so that the Ⓐ mark on the FRONT LOADING GEAR aligns with the Ⓑ mark on the FRONT LOADING SLIDER and that the Ⓒ mark on the FRONT LOADING GEAR aligns with the Ⓓ mark on the CAM SLIDER GEAR as shown in Fig. 4-22.

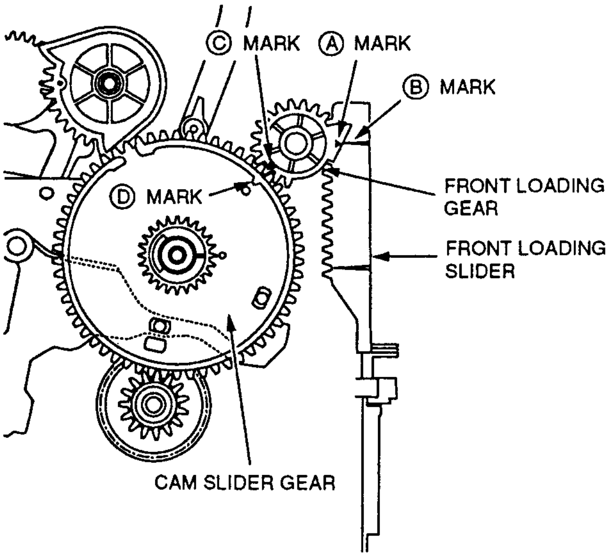

Ⓒ MARK
Ⓐ MARK
Ⓑ MARK
Ⓓ MARK
FRONT LOADING GEAR
FRONT LOADING SLIDER
CAM SLIDER GEAR

Fig. 4-22

4-6-3. Installation of the LOADING BLOCK & MODE DETECT SWITCH

1) Install the LOADING DRIVE BLOCK as shown in Fig. 4-23. Align the Ⓐ mark on the MODE DETECT SWITCH's gear with the Ⓑ mark on the CAM SLIDER GEAR when installing.

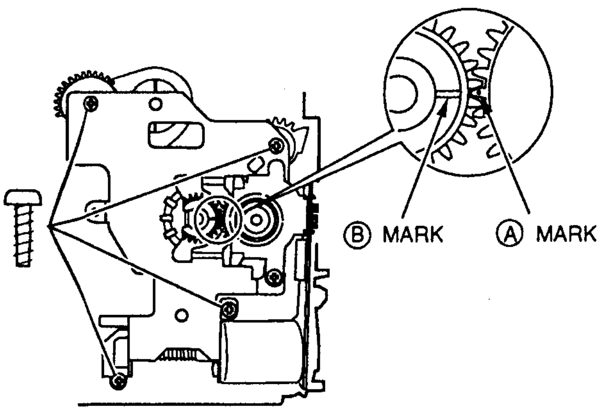


Fig. 4-23

4-7. REPLACEMENT OF THE DISK CLUTCH BLOCK & GEAR COUPLING BLOCK

1) Remove the SLIT WASHER as shown in Fig. 4-24.

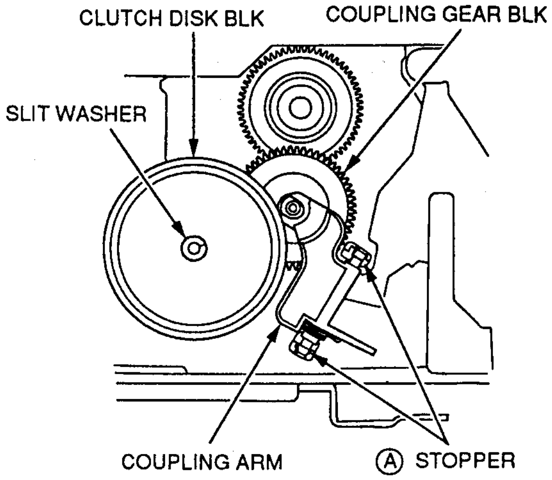

CLUTCH DISK BLK
COUPLING GEAR BLK
SLIT WASHER
COUPLING ARM
Ⓐ STOPPER

Fig. 4-24

2) Release the two Ⓐ stoppers of the COUPLING ARM and pull up the CLUTCH DISK BLOCK and COUPLING GEAR BLOCK at the same time.
3) Reassemble in the reverse order for installation.

4-8. REPLACEMENT OF THE REVIEW BRAKE PART & IDLER PART

4-8-1. Replacement of the REVIEW BRAKE PART

1) Un hook the Ⓐ spring, then release the stopper of the REVIEW BRAKE PART and remove it.

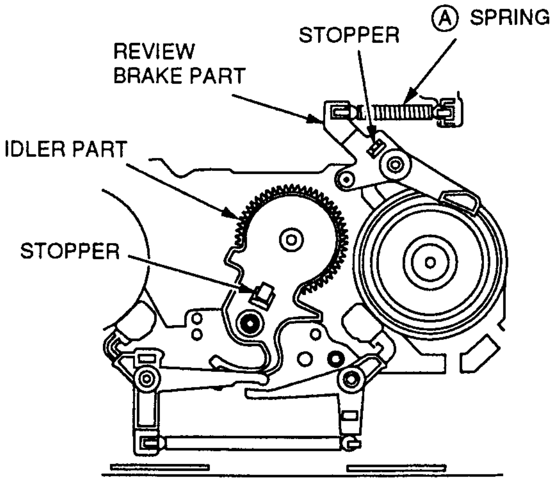

Ⓐ SPRING
STOPPER
REVIEW BRAKE PART
IDLER PART
STOPPER

Fig. 4-25

2) Reassemble in the reverse order for installation.

4-8-2. Replacement of the IDLER PART

1) Remove the CASSETTE LOAD BLOCK & LOADING ARM BLOCK. (Refer to 4-3, "Removal of the EJECTOR BLOCK".)
2) Release the stopper of the IDLER PART and remove it as shown in Fig. 4-25.
3) Reassemble in the reverse order for installation.

4-9. REPLACEMENT OF THE PINCH ROLLER BLOCK

1) Remove the Ⓐ spring, then remove the PINCH ROLLER ARM BLOCK by turning it in the direction of the arrow and pulling it upward as shown in Fig. 4-26.

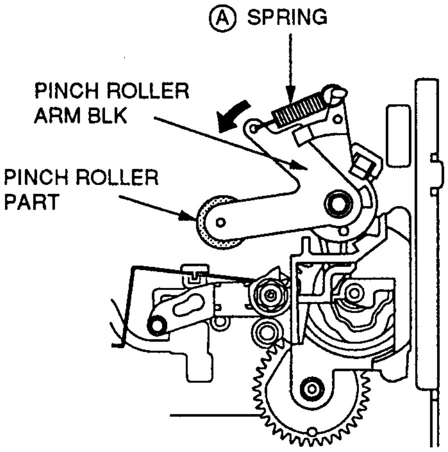

Ⓐ SPRING
PINCH ROLLER ARM BLK
PINCH ROLLER PART

Fig. 4-26

2) Reassemble in the reverse order for installation.

4-10. DISASSEMBLY OF THE PINCH LEVER & PINCH HOLDER

4-10-1. Removal of the PINCH LEVER and PINCH HOLDER

1) Remove the two Ⓐ screws then remove the PINCH LEVER and PINCH HOLDER.

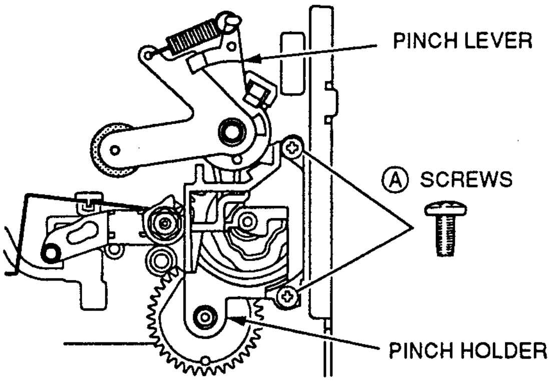

PINCH LEVER
Ⓐ SCREWS
PINCH HOLDER

Fig. 4-27

4-10-2. Installation of the PINCH LEVER and PINCH HOLDER

1) Align the Ⓐ hole on the PINCH SLIDER with the Ⓐ mark on the PINCH GEAR through the hole on the chassis as shown in Fig. 4-28.

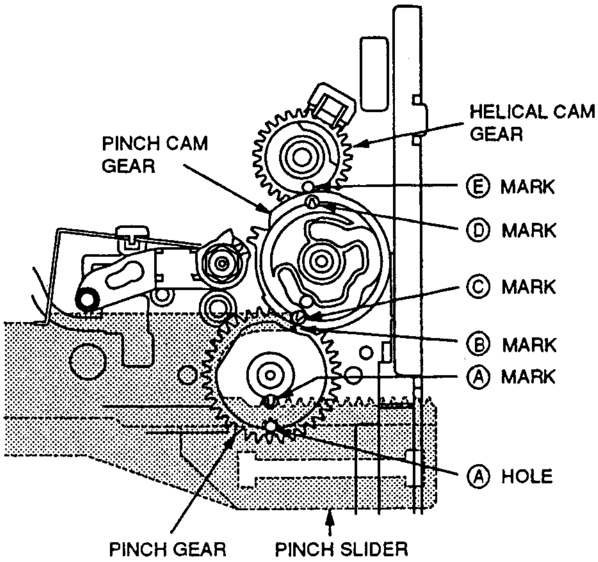

HELICAL CAM GEAR
PINCH CAM GEAR
Ⓔ MARK
Ⓓ MARK
Ⓒ MARK
Ⓑ MARK
Ⓐ MARK
Ⓐ HOLE
PINCH GEAR
PINCH SLIDER

Fig. 4-28

2) Align the Ⓑ mark on the PINCH GEAR with the Ⓒ mark on the PINCH CAM GEAR and the Ⓓ mark on the PINCH CAM GEAR with the Ⓔ mark on the HELICAL CAM GEAR as shown in Fig. 4-28.
3) Install the PINCH LEVER and PINCH HOLDER in the reverse order.

4-11. REPLACEMENT OF THE CAPSTAN MOTOR BLOCK

1) Remove the three Ⓐ screws as shown in Fig. 4-29.

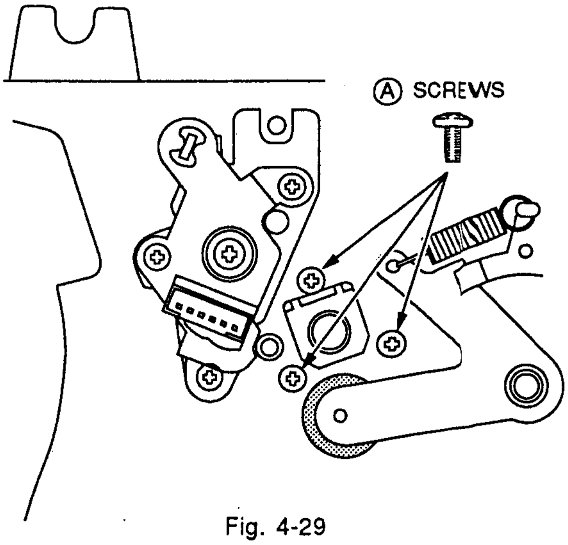


Fig. 4-29

2) Remove the CAPSTAN BELT.
3) Remove the Ⓑ screw and then remove the CAPSTAN MOTOR HOLDER.

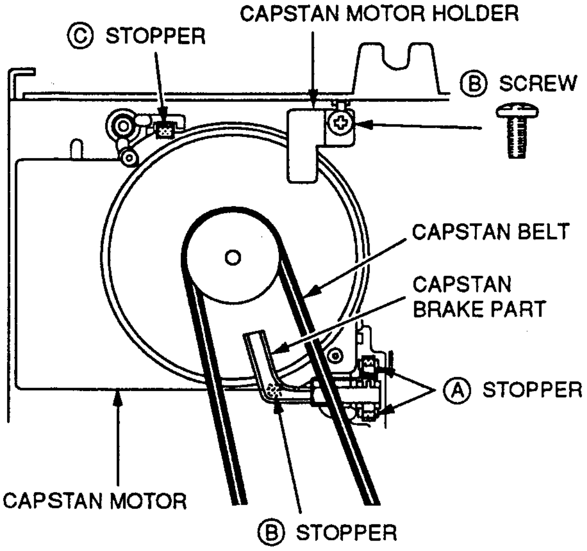

Ⓒ STOPPER
CAPSTAN MOTOR HOLDER
Ⓑ SCREW
CAPSTAN BELT
CAPSTAN BRAKE PART
Ⓐ STOPPER
CAPSTAN MOTOR
Ⓑ STOPPER

Fig. 4-30

4) Release the two Ⓐ stoppers and remove the CAPSTAN BRAKE PART.
5) Remove the CAPSTAN MOTOR BLOCK while releasing the Ⓑ and Ⓒ stoppers.
6) Proceed in the reverse order for installation.

4-12. DRUM MOTOR PC BOARD REPLACEMENT

1) Remove the two Ⓐ screws on the ROTARY PLATE and then remove it.
(If the PRE AMP & Hi-Fi PCB or PRE AMP PCB is not removed yet, remove it first before removing the Ⓐ screws. Refer to 4-1-3, "Removal of the PRE AMP & Hi-Fi PCB".)

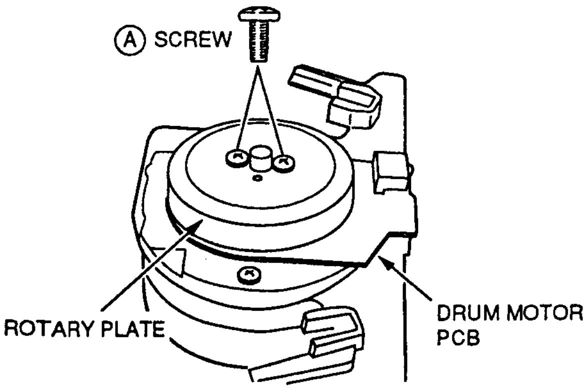

Ⓐ SCREW
ROTARY PLATE
DRUM MOTOR PCB

Fig. 4-31

2) Remove the three Ⓑ screws which retain the DRUM MOTOR PCB and replace it.

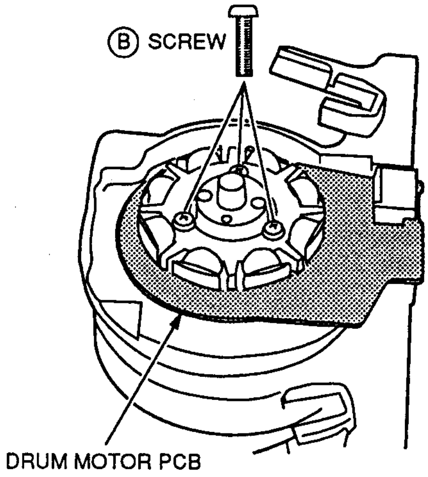

Ⓑ SCREW
DRUM MOTOR PCB

Fig. 4-32

3) Attach the ROTARY PLATE to the collar preload so that the rotary plate Ⓒ hole and collar preload Ⓓ hole line up.

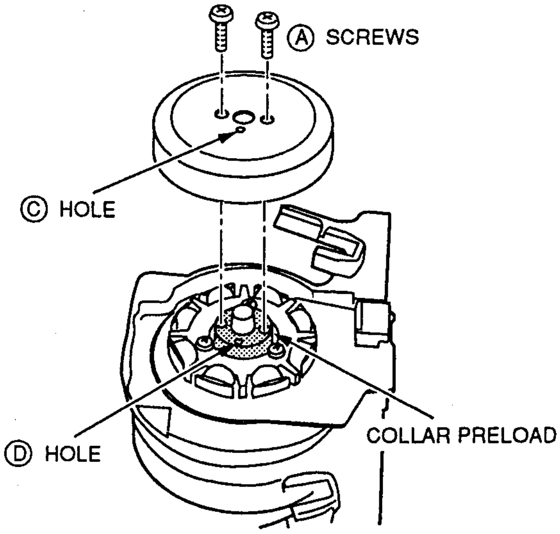

Ⓐ SCREWS
Ⓒ HOLE
Ⓓ HOLE
COLLAR PRELOAD

Fig. 4-33

4) After replacement, PB switching point adjustment (INFORMATION, PRESET IN THE TEST MODE, #3) is absolutely necessary for the proper performance.

4-13. REPLACEMENT OF THE UPPER DRUM

4-13-1. Removal of the UPPER DRUM

1) Unsolder the relay leads (eight leads for VS-X480EGN, twelve leads for VS-X800EGN-N and fourteen leads for VS-X1000EGN-N) as shown in Fig. 4-34 to 4-36.

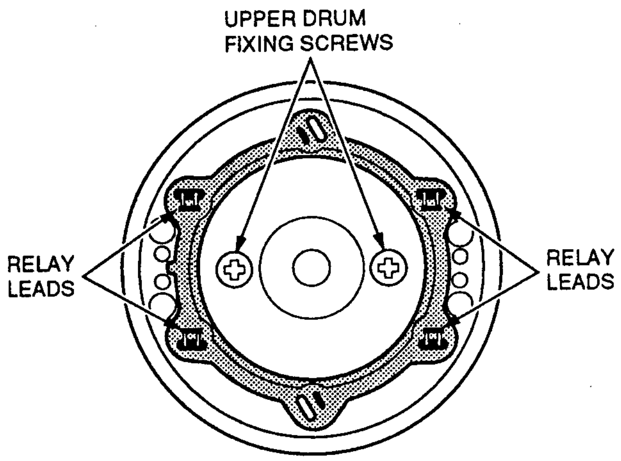

UPPER DRUM
FIXING SCREWS
RELAY
LEADS
RELAY
LEADS

Fig. 4-34 (VS-X480EGN)

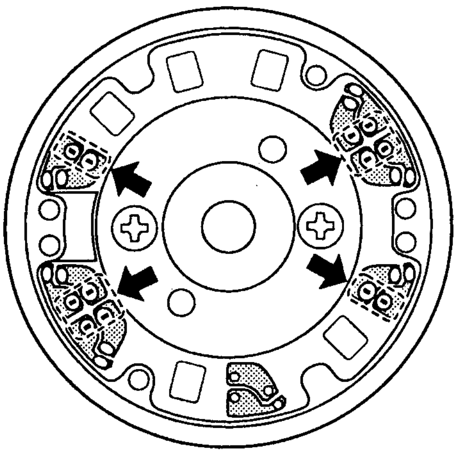


Fig. 4-35 (VS-X800EGN-N)

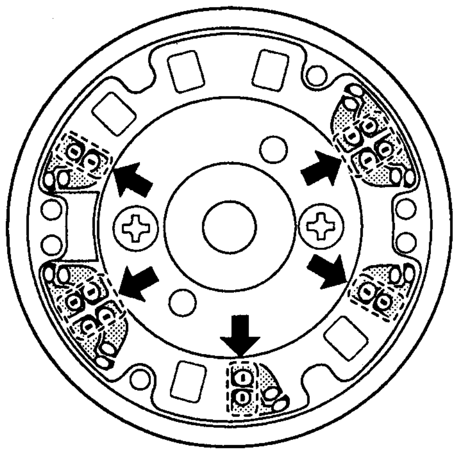


Fig. 4-36 (VS-X1000EGN-N)

2) Gently lift and remove the UPPER DRUM.

4-13-2. Installation of the UPPER DRUM

[For VS-X480EGN]

1) Attach the UPPER DRUM to the LOWER DRUM ROTOR, so that the upper drum convex Ⓐ and lower drum rotor's white mark line up, as shown in Fig. 4-37.

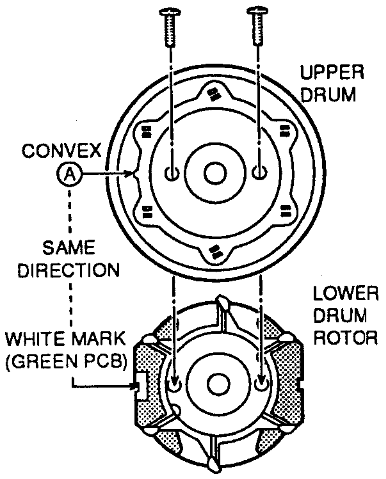

UPPER
DRUM
CONVEX
Ⓐ
SAME
DIRECTION
LOWER
DRUM
ROTOR
WHITE MARK
(GREEN PCB)

Fig. 4-37

[For VS-X800, X1000EGN-N]

1) Attach the UPPER DRUM to the LOWER DRUM ROTOR, so that the upper drum's white mark and lower drum rotor's white mark line up, as shown in Fig. 4-38.

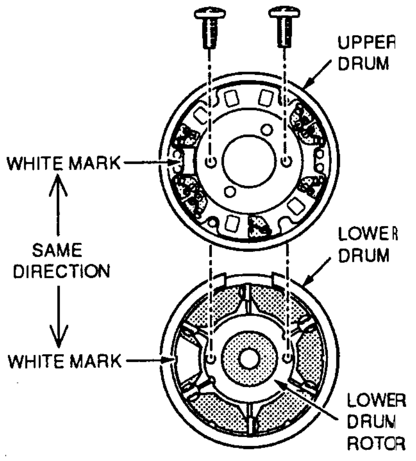

UPPER
DRUM
WHITE MARK
SAME
DIRECTION
LOWER
DRUM
WHITE MARK
LOWER
DRUM
ROTOR

Fig. 4-38

NOTE : Because height precision is required for proper performance, and because head tips are fragile, the following points should be noted when replacing the UPPER DRUM BLOCK.

(a) Do not loosen the set screw on the collar preload.
(b) Before fixing, use alcohol to clean both surfaces where the upper drum and the rotary transformer meet.
(c) If the UPPER DRUM can not be inserted on to the shaft easily during installation, clean the hole in the UPPER DRUM with alcohol and put a little oil on the shaft.
(d) Make sure that the upper drum fixing screw holes, on the rotary transformer part, and the upper drum fixing screw penetration holes match exactly before inserting the fixing screws.
(e) Tighten the two upper drum fixing screws alternately and gradually.

4-13-3. After replacement.

After replacement, the following adjustments are necessary for the proper performance.

1) Control head phase adjustment. (MECHANICAL ADJUSTMENT 5-3-3.)
2) PB switching point adjustment. (INFORMATION, PRESET IN THE TEST MODE #3)
3) ENV. DET (I-HQ) adjustment. (INFORMATION, PRESET IN THE TEST MODE #4)
4) Video head REC current adjustment. (VI. ELECTRICAL ADJUSTMENT Step8)

4-14. REMOVAL OF THE POWER SUPPLY BLOCK

1) Disconnect the P1 connector on the POWER (B) PCB as shown in Fig. 4-39.

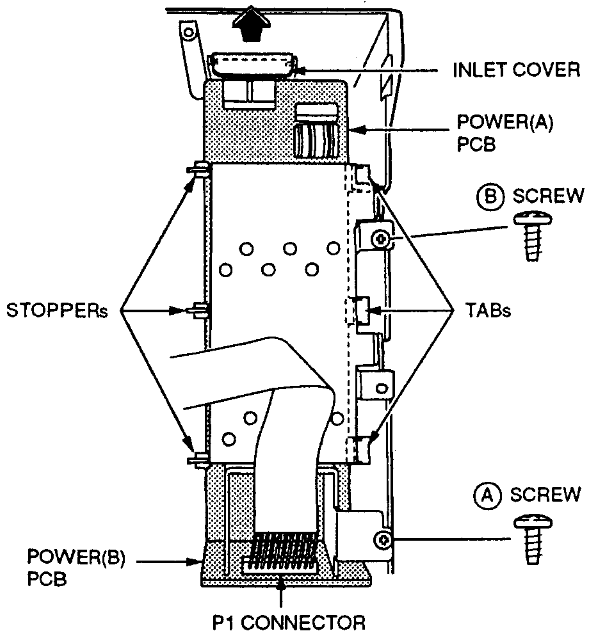


Fig. 4-39

2) Remove the Ⓐ screw and then disconnect the POWER (B) PCB from the POWER (A) PCB by pulling it up.
3) While pressing the tabs located at the bottom side in the direction of the arrows, remove the INLET COVER by pulling it up.

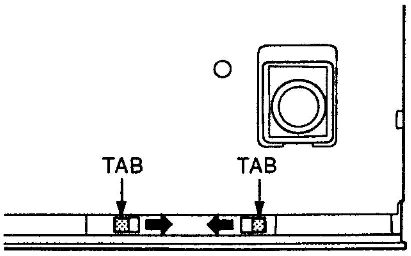


Fig. 4-40

4) Remove the Ⓑ screw. Next, while releasing the three tabs, pull up the right side of the POWER (A) PCB carefully then remove it from the chassis as shown in Fig. 4-39.

NOTE : For VS-X1000EGN-N model, disconnect the P57, P58 and P18 connectors on the OPERATION (A) PCB before proceeding step 4). And in order to make removal easier, carefully press the right lower part of the chassis to the outside when removing the POWER (A) PCB from the chassis as shown in Fig.4-39.

4-15. REMOVAL OF THE MAIN PCB

4-15-1. Removal of the MECHANISM BLOCK

1) Remove the BOTTOM COVER (refer to step 1-2, on page 7).
2) Remove the FRONT PANEL BLOCK (refer to step 1-3, on page 7).
3) Remove the MECHANISM BLOCK (refer to step 4-1, "REMOVAL OF THE MECHANISM BLOCK").

NOTE : In case that the removal of the PRE AMP PCB or PRE AMP & Hi-Fi PCB from the MECHANISM BLOCK is not necessary (this means PRE AMP PCB or PRE AMP & Hi-Fi PCB is still attached on the MECHANISM BLOCK even the MECHANISM BLOCK is removed from the chassis), you can skip the following steps.

[For VS-X480EGN & VS-X800EGN-N models]
* Step 4-1-3, 3) to 6).

[For VS-X1000EGN-N model]
* Step 4-1-3, 2) to 6).
* Step 4-2

4-15-2. Removal of the OPERATION PCB (except VS-X1000EGN-N model)

1) While releasing the three tabs, pull out the upper side of the OPERATION PCB and angling it at approx. 75° angle direction.

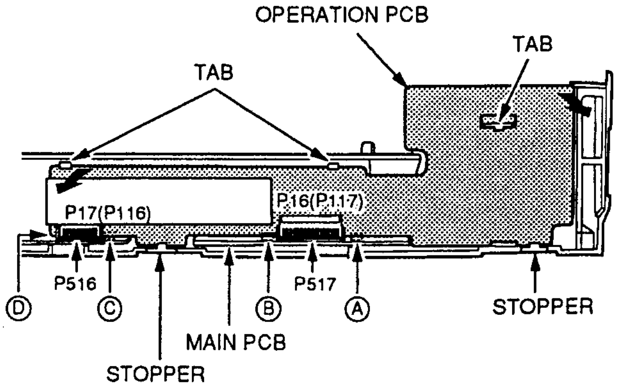


Fig. 4-41

2) Carefully detach the OPERATION PCB from the MAIN PCB by inserting a flat head screwdriver in the four places (in turn, points Ⓐ, Ⓑ, Ⓒ and Ⓓ, use a small screwdriver for point Ⓓ) shown in Fig. 4-41 and lifting the OPERATION PCB up little by little until both connectors are fully disconnected .
Take special care not to brake the tabs of the connector.

4-15-3. Removal of the EGN PCB

[For VS-X480EGN, VS-X800EGN-N models]

1) Remove the two PCB HOLDER (1) which secure the EGN PCB as shown in Fig. 4-42.

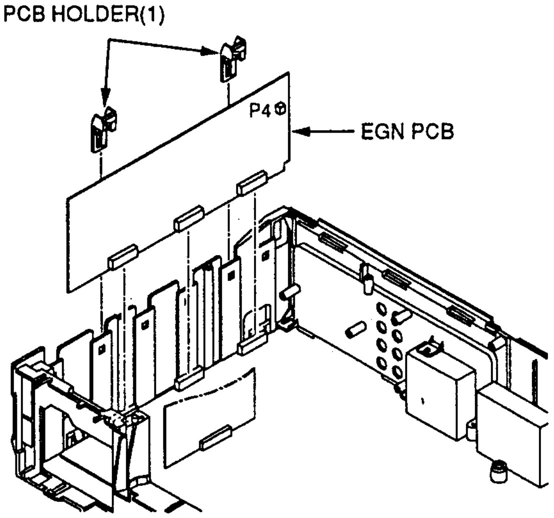


Fig. 4-42

2) Disconnect the flat cable from the P4 connector on the EGN PCB then detach the EGN PCB from the MAIN PCB by pulling it up.

[For VS-X1000EGN-N model]

1) Remove the three retaining screws and remove the PCB SUPPORT as shown in Fig. 4-43.

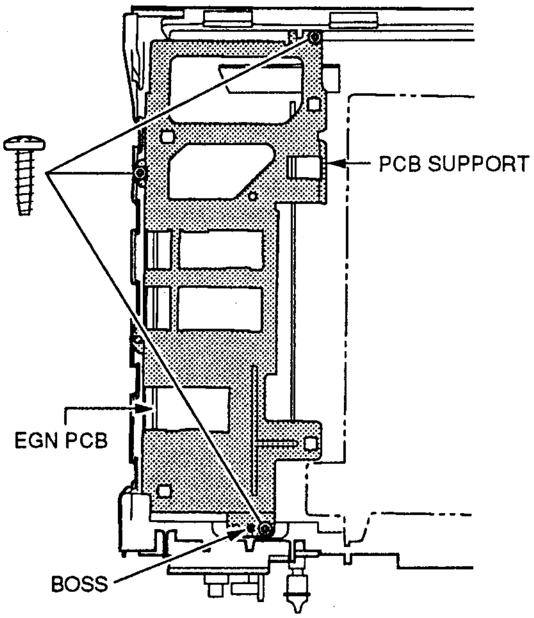


Fig. 4-43

2) Disconnect the flat cable from the P4 connector on the EGN PCB then detach the EGN PCB from the MAIN PCB by pulling it up.

4-15-4. Removal of the MAIN PCB

1) Disconnect the P1 connector on the POWER SUPPLY (B) PCB (refer to Fig. 4-39).
2) Disconnect the P1 connector on the IN/OUT PCB. (VS-X1000EGN-N only.)
3) Remove the MAIN PCB retaining screw as shown in Fig. 4-44.

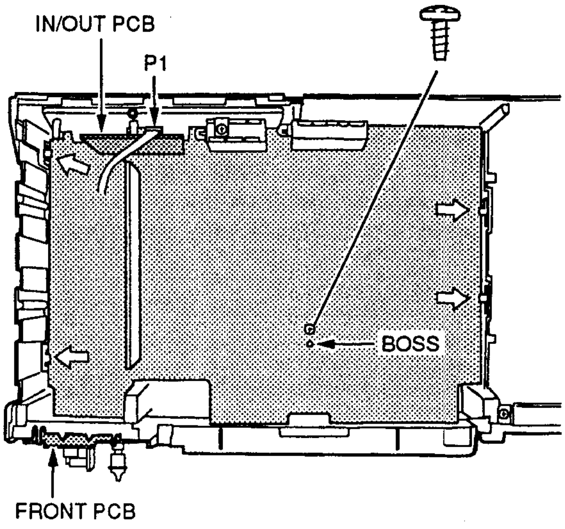


Fig. 4-44

4) Lift up the REAR JACK PANEL by pressing the two stoppers in the direction of the arrows as shown in Fig. 4-45.

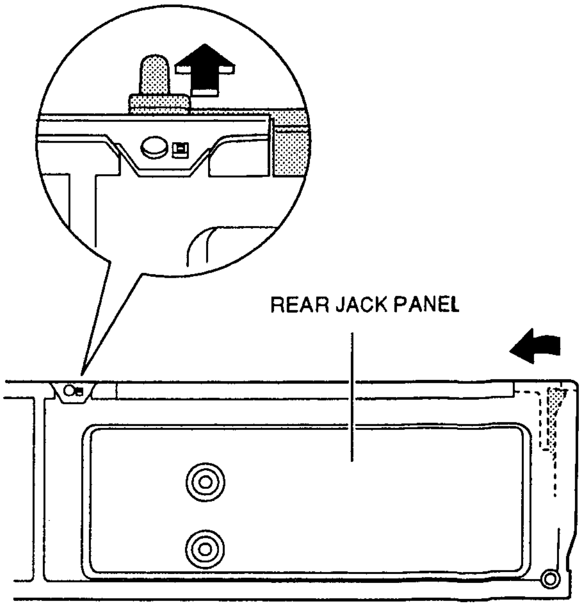


Fig. 4-45

5) Carefully remove the MAIN PCB from the chassis while releasing the four tabs as shown in Fig. 4-44.
6) Reassemble in the reverse order for installation.

V. MECHANICAL ADJUSTMENT

NOTE :Turn the OPERATION (A) PCB to the forward direction before proceeding (refer to step 4-1-2 on page 13). (VS-X1000EGN-N only)

5-1. BACK TENSION ADJUSTMENT

1) Prepare a video cassette tape which you no longer need. Remove both tape reels and the tape protection cover from the cassette tape. Next, cover the video cassette's left and right detection holes with black adhesive tape.
2) Engage the playback mode using with a tapeless tape.
3) Confirm the distance between the three marks (lines) on the TENSION ARM and the Ⓐ mark on the MECHA. CHASSIS so that the Ⓐ mark aligns with the center line on the TENSION ARM as shown in Fig. 5-1.
4) If the result is not satisfactory, eject the tape and adjust the TENSION ADJUST repeatedly until a satisfactory result is achieved.

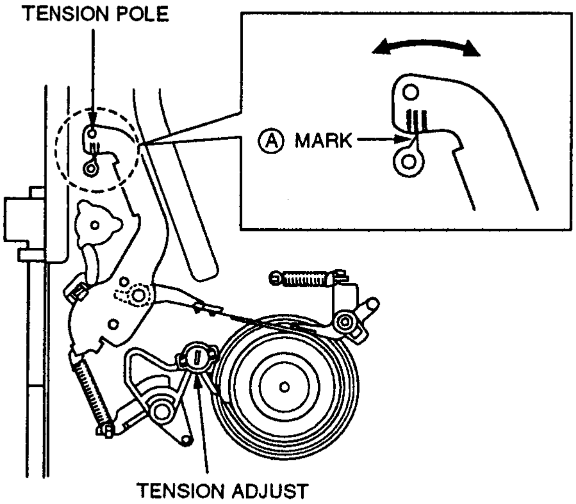


Fig. 5-1

5-2. TAPE TRANSPORT ADJUSTMENTS

NOTE : The following adjustments are required only when an irregularity is found, since these adjustments are precisely set at the factory.

5-2-1. Tape curl adjustment at the TAKE-UP TAPE GUIDE

1) Play back a recorded tape which is no longer needed.
2) Turn the Ⓐ screw on the A/C HEAD BLK, until the edge of the tape barely touches the lower part of the TAKE UP TAPE GUIDE, without any curl or wrinkle.

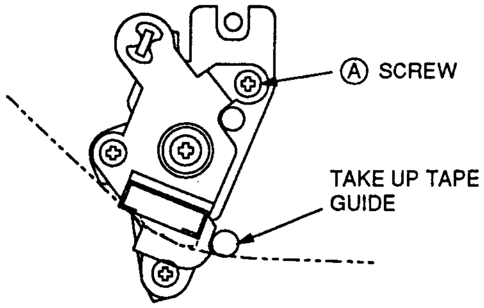
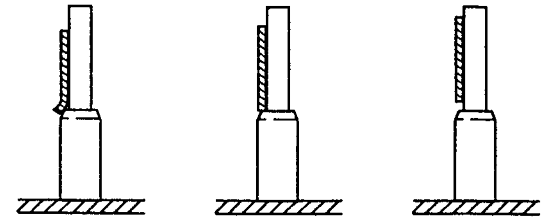


Fig. 5-2

(TAKE-UP TAPE GUIDE)



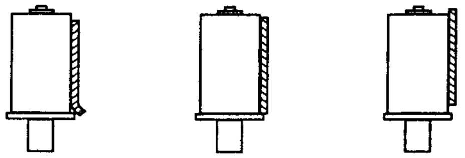
(a) INCORRECT (b) CORRECT (c) INCORRECT

Fig. 5-3

3) Once the Ⓐ screw is adjusted, A/C HEAD height and azimuth adjustment is required. (Refer to 5-3. A/C HEAD POSITION ADJUSTMENT.)

5-2-2. Tape curl adjustment at the SUPPLY TAPE GUIDE

Confirm that the lower edge of the tape barely touches the lower part of the SUPPLY TAPE GUIDE, without any curl or wrinkle as shown in Fig. 5-4a. If necessary, bend the neck part of the TENSION ARM in the Ⓐ or Ⓑ direction slightly until a satisfactory result is achieved.



(a) INCORRECT (b) CORRECT (c) INCORRECT

Fig. 5-4a

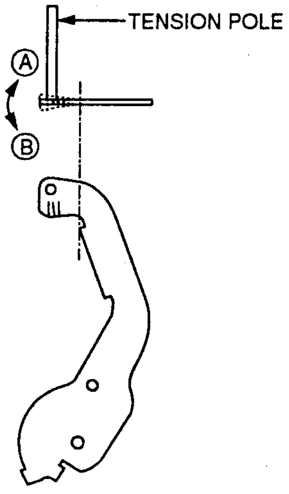


Fig. 5-4b

5-2-3. REVIEW ARM height adjustment

1) Play back the last part of an E-240 (T-160) tape and set the unit to the REVIEW mode by pressing the REW button. (Remove the tape protection cover to make the adjustment easier.)

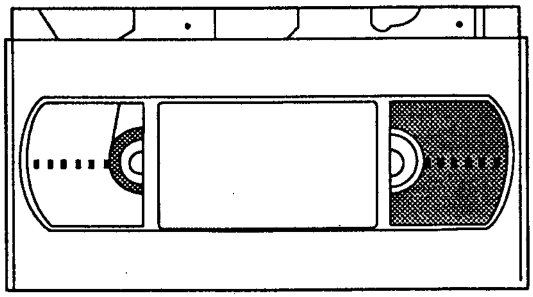


Fig. 5-5

2) Turn the REVIEW ARM height Ⓐ nut so that the edge of the tape barely touches the lower part of the TAKE-UP TAPE GUIDE, without any curl or wrinkle between the TAKE-UP TAPE GUIDE and the CAPSTAN SHAFT as shown in Fig. 5-6 to Fig. 5-8.

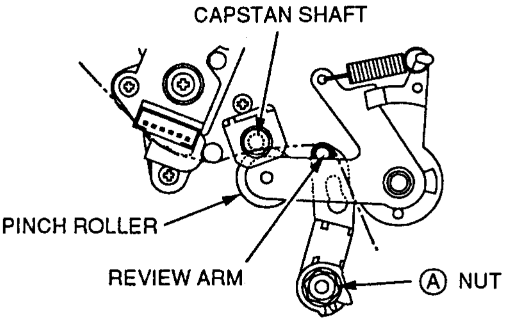
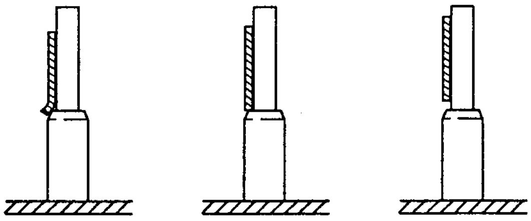


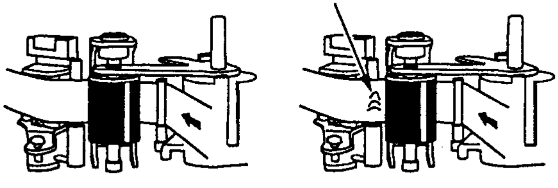
Fig. 5-6

(TAKE-UP TAPE GUIDE)



(a) INCORRECT (b) CORRECT (c) INCORRECT

Fig. 5-7

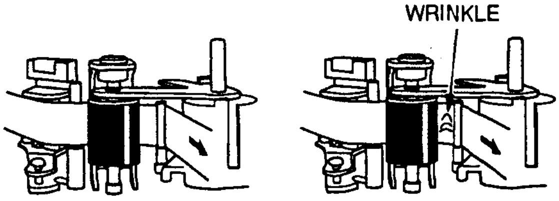


CORRECT INCORRECT

Fig. 5-8

3) Play back the last part of an E-240 (T-160) tape and this time set the unit to the CUE mode by pressing the F. FWD button.

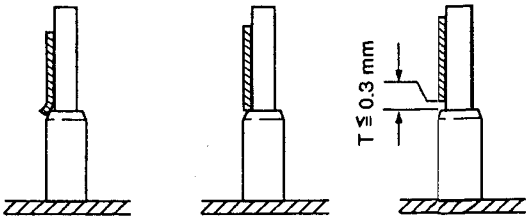
4) Confirm there is no curl or wrinkle near the REVIEW ARM's guide. If curl or wrinkle of the tape occurs, slightly turn the Ⓐ nut (Shown in Fig. 5-6) until it disappears.



CORRECT INCORRECT

Fig. 5-9

5) Set the unit to the REVIEW mode again. Then confirm that there is no curl or wrinkle near the TAKE-UP TAPE GUIDE. (A small gap may appear after this adjustment, but this is allowable.)



(a) INCORRECT (b) CORRECT (c) CORRECT

Fig. 5-10

NOTE :

1. If the results are not satisfactory, repeat steps 2) to 5).
2. Always play an undamaged tape to obtain satisfactory adjustment.
3. Because an E-240 (T-160) tape can be damaged easily, due of its thinness, a pre-adjustment with an E-180 (T-120) tape is recommended.

5-2-4. LOADING LEADER height adjustments

1) Slightly loosen the set screw at the lower part of the LOADING LEADERs (L), (R) so that the LOADING LEADER can be adjusted with reasonable tightness. (Refer to Fig. 5-11.)

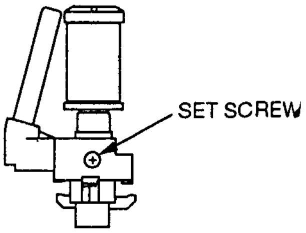


Fig. 5-11

2) Play back the reference tape TF-530RFS (AT-751775).
3) Connect an oscilloscope's CH-1 to the TP2 (ENVE) on the PRE AMP & Hi-Fi PCB (or PRE AMP PCB) and CH-2 to the TP1 (V-SWP) for triggering.
4) Turn the LOADING LEADER heads with a flat head(–) screw driver to obtain a flat RF envelope as the ideal envelope, as shown in Fig. 5-12.
5) After adjustment is completed, tighten the loading leader set screws.

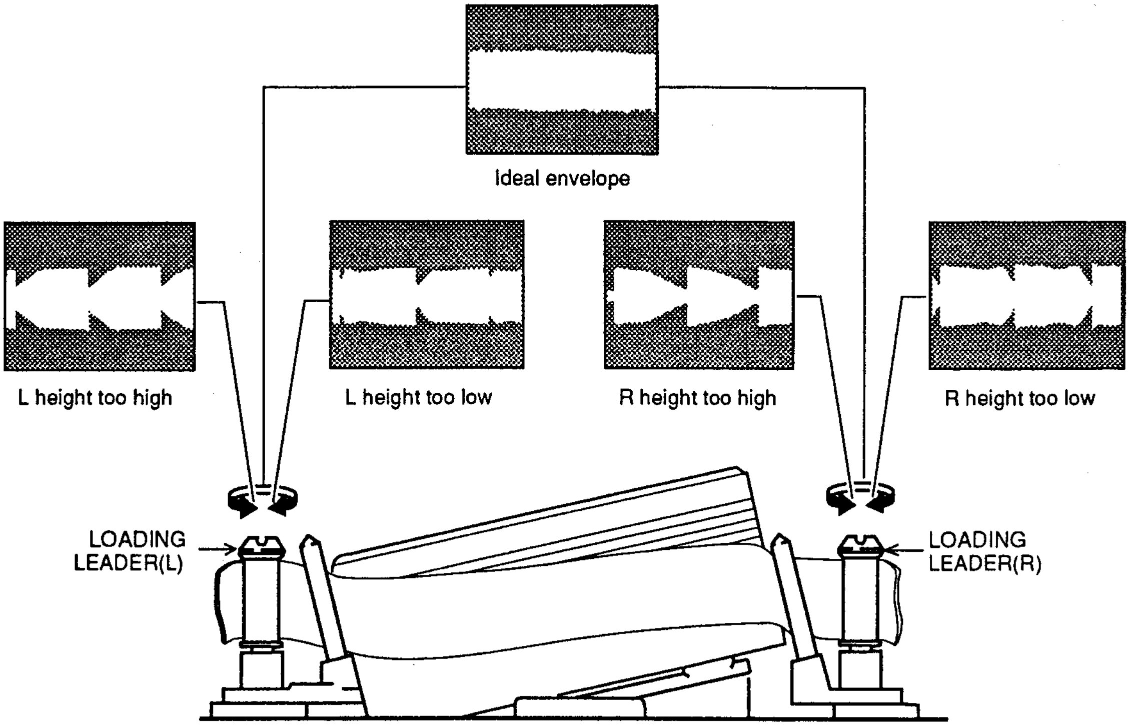

Ideal envelope
L height too high
L height too low
R height too high
R height too low
LOADING LEADER(L)
LOADING LEADER(R)

Fig. 5-12

5-3. A/C HEAD POSITION ADJUSTMENT

5-3-1. Azimuth adjustment

1) Connect an AC voltmeter or an oscilloscope to the AUDIO OUT terminal on the rear panel.
2) Play back the reference tape TF-530RFS (AT-751775).
3) Press the "AUDIO MONITOR" button on the remote control unit repeatedly and choose the linear (normal) audio playback. (VS-X800, X1000EGN-N models only)
4) Adjust the Ⓑ screw to obtain the maximum audio output.

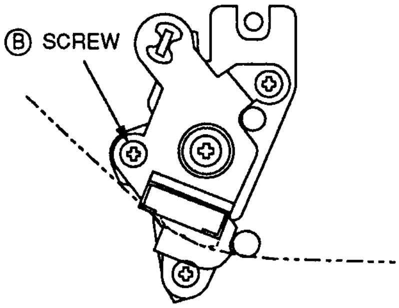


Fig. 5-13

5-3-2. Height adjustment

1) Play back test tape TF-526HH (AT-751788).
2) Connect an oscilloscope to the AUDIO OUT terminal on the rear panel .
3) Slightly turn the Ⓒ screw so that the output level is between 30 ~ 80 mVp-p.

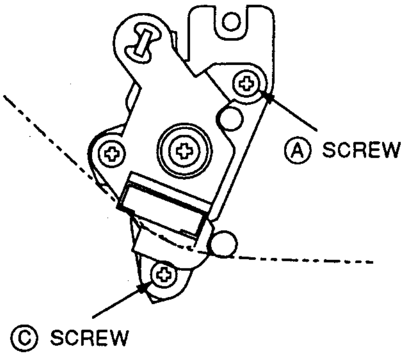

Ⓐ SCREW
Ⓒ SCREW

Fig. 5-14

4) Slightly turn the Ⓐ screw until the tape edge barely touches the lower part of the TAKE-UP TAPE GUIDE without any curl or wrinkle as shown in Fig. 5-3.
5) Adjust the head azimuth again. (Turning the Ⓒ screw, or Ⓐ screw, will cause head azimuth mis-alignment. Refer to 5-3-1. Azimuth adjustment.)
6) Confirm whether the output level is still between 30 ~ 80 mVp-p or not. If the result is not satisfactory, repeat steps 3) to 5).

5-3-3. Phase adjustment

1) Connect an oscilloscope's CH-1 to the TP2 (ENVE) on the PRE AMP & Hi-Fi PCB (or PRE AMP PCB) and CH-2 to the TP1 (V-SWP) for triggering.
2) Play back reference tape TF-530RFS (AT-751775).
3) Press the ">" or "<" TRACKING button on the remote control unit until the "X" mark can be seen in the center position of the tracking range on the TV screen as shown in Fig. 5-15.

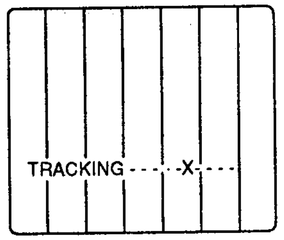


Fig. 5-15

4) Loosen the Ⓓ screw slightly so that the A/C HEAD BASE can be moved with reasonable tightness.

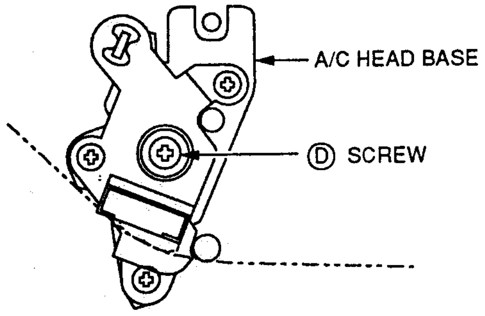


Fig. 5-16

5) Insert a philips type screwdriver into the A/C HEAD BASE and Ⓐ hole as shown in Fig. 5-17

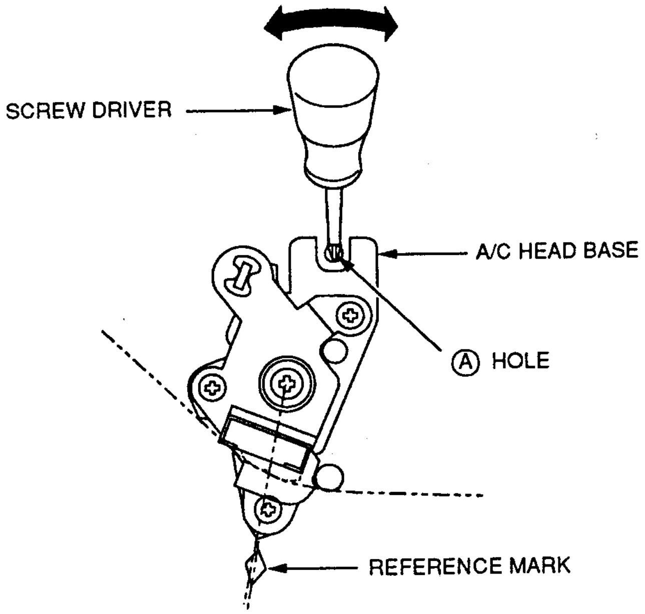


Fig. 5-17

6) Move the A/C HEAD BASE by moving a screwdriver in the direction of the arrow as shown in Fig. 5-17 to obtain the maximum RF output, then tighten the Ⓓ screw. Although there are a few points at which the RF output becomes maximum, the pointed head of the A/C HEAD BASE must be positioned as close to the reference mark as possible.
7) Eject the tape and then re-insert it and play it back again. Confirm that the RF output is maximum after the auto tracking control has been activated. Next, press the "<" or ">" cursor button on the remote control unit alternately and confirm that the RF output is maximum at the tracking centre position. If the result is not satisfactory, repeat the adjustment steps 2) to 6). (This adjustment is very important as this affects the interchangeability of the recorded tapes.)

VI. ELECTRICAL ADJUSTMENT

Precautionary items prior to adjustments

1. The colour bar generator output should be 1.0 Vp-p.
2. The video output terminal should be terminated with 75 ohms (connect dummy load or 75 ohms input TV).
3. If the IC602 (Y/C signal processor) on the MAIN PCB is replaced, adjustment (step 1, 4 to 7 & 9) should be performed.
4. To make adjustment easier, remove the PCB SUPPORT before proceeding (refer to Fig. 4-43 on page 23, VS-X1000EGN-N only).
5. When adjusting the "BELL filter" and "EQ level" (Steps 2 & 3), remove the MECHANISM BLOCK, connect the two provided extension cables and then place a cover on the start sensor. Refer to page 13 for the removal method.
6. Hi-Fi carrier frequency (NTSC) adjustment (step 13) should be performed before Hi-Fi carrier frequency (PAL) adjustment (step 14).

The following test tapes are required.

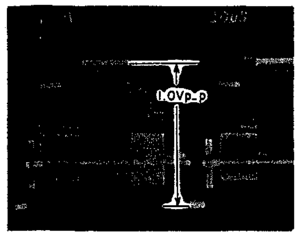
Test tape	Parts No.
TF-532CBS	AT-751360
TF-542CBS	AT-751365

STEP | ADJUSTMENT ITEM

1. MODE and INPUT SIGNAL/TEST TAPE
2. TEST POINT and ADJ part
3. REMARKS (•) & RESULT (∗)

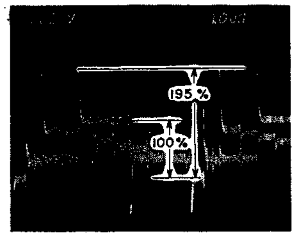
1 VIDEO E-E LEVEL

1. "E-E" (STOP mode), PAL colour bar signal
2. VIDEO OUT & VR602 (E-E LEVEL)
3. • Connect an oscilloscope to VIDEO OUT.
   ∗ 1.0 Vp-p



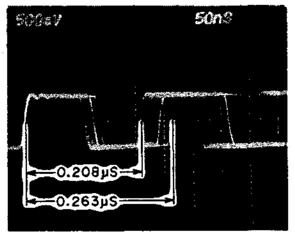
4 WHITE CLIP

1. "E-E", PAL Colour bar signal
2. TR625 emitter & VR605 (WHITE CLIP)
3. • Set the colour system to "AUTO" mode with a remote control unit.
   • Connect an oscilloscope to the emitter of TR625.
   ∗ Adjust VR605 so that the white clip level is 195 % of the video level (the level from sync tip to white 100%).



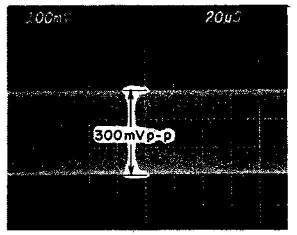
5 CARRIER SET & DEVIATION

1. "E-E", PAL stair step signal
2. Lead of VR601 (REC-Y) & VR603 (DEVIATION), VR604 (CARRIER),
3. • Connect an oscilloscope to the lead of the VR601 (REC FM OUT).
   ∗ Adjust VR603 and VR604 alternately until the result is satisfactory.
   ∗ VR603 (DEVIATION): 0.208 µs (4.8 MHz)
   ∗ VR604 (CARRIER) : 0.263 µs (3.8 MHz)



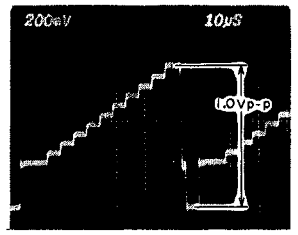
6 Y REC LEVEL

1. "E-E", PAL-SP mode, no signal input
2. TR615 emitter (REC-Y) & VR601 (REC-Y),
3. • Connect an oscilloscope to the TR615 emitter on the MAIN PCB.
   ∗ Adjust VR601 so that the Y REC current level is 300 mVp-p.



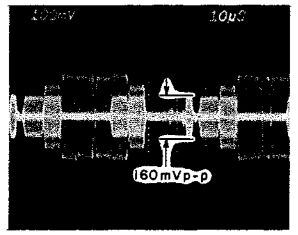
9 VIDEO PB LEVEL

1. "REC"→"PB", PAL stair step signal
2. VIDEO OUT & VR606 (PB LEVEL)
3. • Connect an oscilloscope to VIDEO OUT.
   • Make a recording on a blank tape, then play it back.
   ∗ Adjust VR606 so that the PB level becomes 1.0 Vp-p.



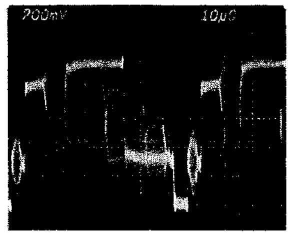
7 CHROMA REC CURRENT

1. "E-E", PAL SP mode, PAL colour bar signal
2. TR691 emitter & VR691 (REC-CHROMA)
3. • Connect an oscilloscope to the TR691 emitter. (Remove the D-NICAM PCB in order to make the oscilloscope connection easier.)
   ∗ Adjust VR691 on the MAIN PCB so that the burst signal level is 160 ± 5 mVp-p.

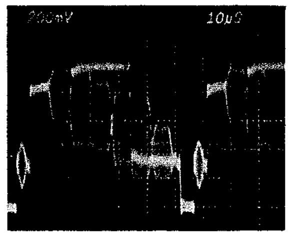


11 DELAYED C LEVEL

1. "PB" → "STILL", test tape TF-542CBS
2. VIDEO OUT & VR4 (DELAYED C LEVEL)
3. • Connect an oscilloscope to VIDEO OUT.
   ∗ Adjust VR4 so that the chroma signal vibration is at a minimum as shown. (Minimum colour flicker on the screen.)



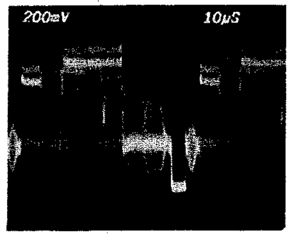
INCORRECT



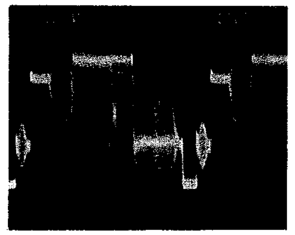
CORRECT

10 DELAYED Y LEVEL

1. "PB" → "STILL", test tape TF-542CBS
2. VIDEO OUT & VR3 (DELAYED Y LEVEL)
3. • Connect an oscilloscope to VIDEO OUT.
   ∗ Adjust VR3 so that the vertical shaking of the Y signal is minimum.



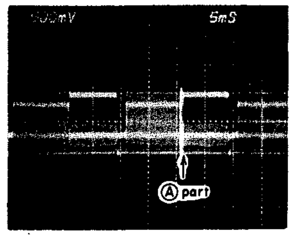
INCORRECT

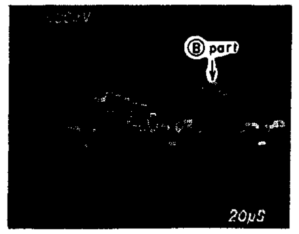


CORRECT

12 CDR (X1000EGN-N model only)

1. "PB", test tape TF-532CBS
2. VIDEO OUT, TP1 (SWP) & VR1 (MIX GAIN) ,VR2 (PHASE ADJ.)
3. • Connect CH-1 of an oscilloscope to VIDEO OUT and CH-2 to the TP1 on the PRE AMP & Hi-Fi PCB for triggering.
   • Set the oscilloscope to delayed scanning mode and observe the Ⓐ part (line non-correlated part).
   ∗ After the auto tracking control has been activated, adjust the VR1 and VR2 alternately so that the non-correlated chroma signal (Ⓑ part) is at its minimum level.





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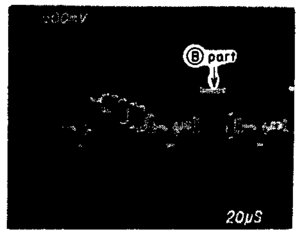
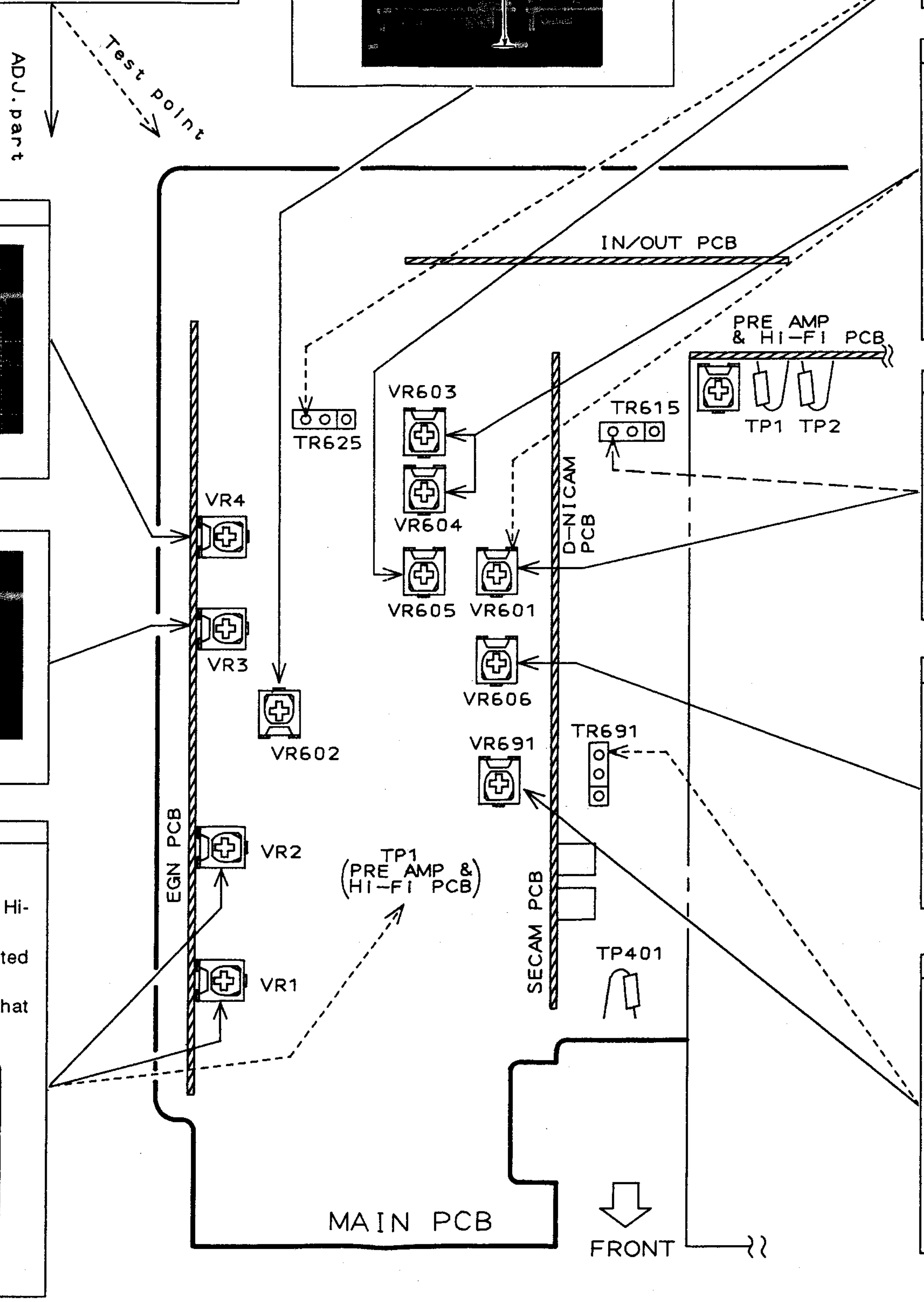


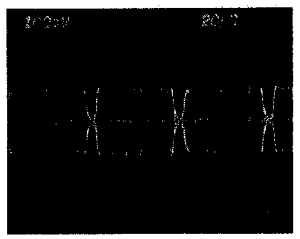
CORRECT

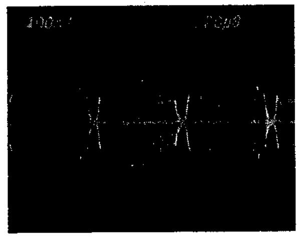


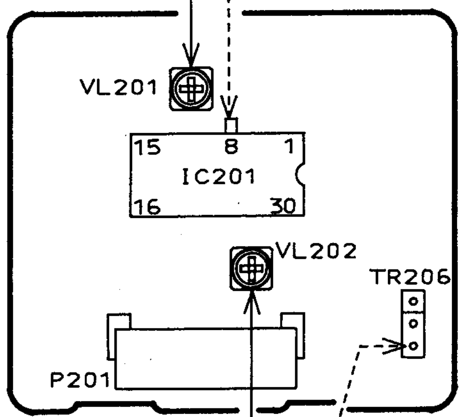
2 BELL FILTER (X480EGN only)

1. "E-E" (STOP mode), SECAM colour bar signal
2. IC201 ⑧ pin & VL201
3. • Set the system to "AUTO" or "SECAM" mode with a remote control unit.
   - Connect an oscilloscope to the IC201 ⑧ pin.

   ∗ Adjust VL201 so that the waveform shape is as flat as possible during both the B-Y and R-Y periods.


CORRECT


INCORRECT

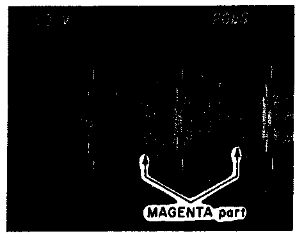


SECAM PCB
(X480EGN ONLY)

3 EQUALIZER LEVEL (X480EGN only)

1. "E-E" (STOP mode), SECAM colour bar signal
2. TR206 emitter VL202
3. • Set the system to "AUTO" or "SECAM" mode with a remote control unit.
   - Connect an oscilloscope to the TR206 emitter.

   ∗ Adjust VL202 so that the magenta level between the B-Y and R-Y periods are equal.



13 NTSC Hi-Fi CARRIER FREQUENCY (except X480EGN)

1. "E-E" (NTSC mode), no signal input
2. C121 (1.3 MHz), C128 (1.7 MHz) & VR101 (L-CH fo), VR102 (R-CH fo)
3. • Solder an insulated wire (approx.10 cm length) to each of the Ⓐ and Ⓑ points respectively located on the reverse side of the PRE AMP & Hi-Fi PCB (refer to step 4-1-3 on page 13 for removal of the PRE AMP & Hi-Fi PCB).
   - Connect a frequency counter to the Ⓐ side wire.

   ∗ Adjust the VR101 so that the frequency counter registers 1.3 MHz ±50 Hz.
   - Connect a frequency counter to the Ⓑ side wire.

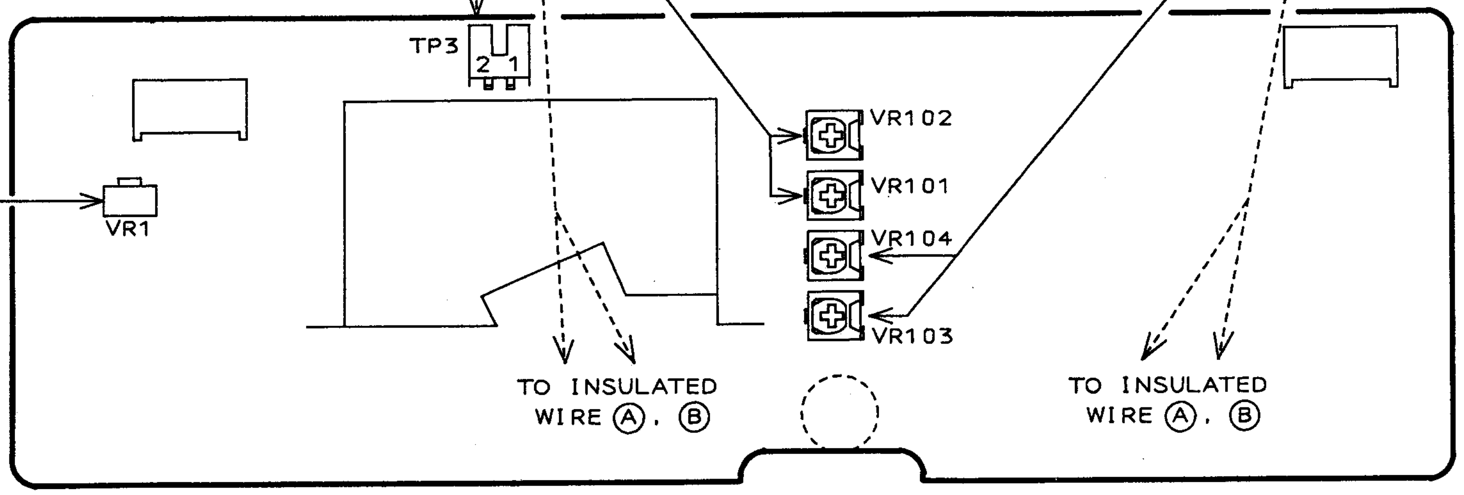
   ∗ Adjust the VR102 so that the frequency counter registers 1.7 MHz ±50 Hz.

14 PAL Hi-Fi CARRIER FREQUENCY (except X480EGN)

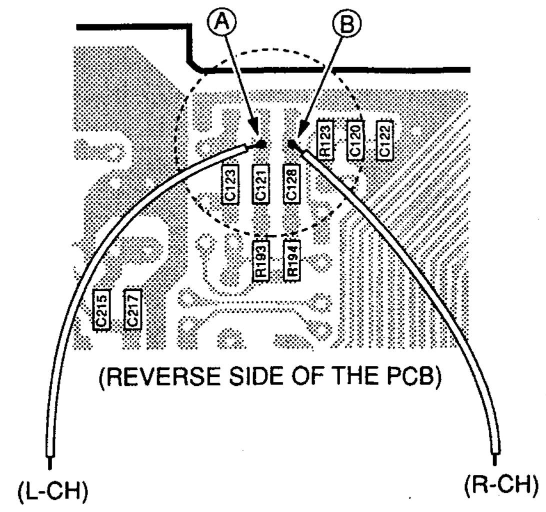
1. "E-E" (PAL mode), no signal input
2. C121 (1.4 MHz), C128 (1.8 MHz) & VR103 (L-CH fo), VR104 (R-CH fo)
3. • Adjustment should be performed with the same procedure as step 13.
   - Connect a frequency counter to the Ⓐ side wire.

   ∗ Adjust the VR103 so that the frequency counter registers 1.4 MHz ±50 Hz.
   - Connect a frequency counter to the Ⓑ side wire.

   ∗ Adjust the VR104 so that the frequency counter registers 1.8 MHz ±50 Hz.
   - Remove the two insulated wire after the adjustment has been completed.



PRE AMP & Hi-Fi PCB
(OR PRE AMP PCB)

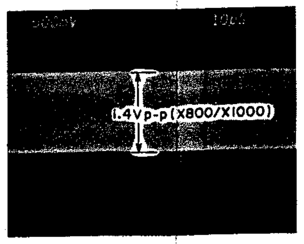


(REVERSE SIDE OF THE PCB)

8 Y REC CURRENT

1. "REC", PAL SP mode (X480 only), PAL LP mode (X800 & X1000 only), no signal input
2. TP3 ② pin & VR1 (REC Y CURR)
3. • Connect an oscilloscope to the TP3 ② pin.

   ∗ Adjust VR1 on the PRE AMP or PRE AMP & Hi-Fi PCB so that the Y REC current is 1.62 V ±50 mVp-p for X480 or 1.4 V ±50 mVp-p for X800 & X1000 models.



VII. PARTS LIST

ATTENTION

1. When placing an order for parts, be sure to list the Part No., Model No. and the description of earch part. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.
2. Please make sure that Part No. is correct when ordering. If not, a part different from the one you ordered may be delivered.
3. Since the parts shown in Parts List or Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the Parts List.

a) Mechanism Block

2. HEAD BASE BLOCK

Ref. No.	Part. No.	Description
1	BH-T2023A320A	HEAD BASE BLOCK
2	HP-H2206A010A	HEAD R/P PR4-8FU C
3	ZS-477876	PAN20x03STL CMT
4	ZS-536488	BID20x08STL CMT
5	ZG-402895	SP CS ANGLE ADJUST

SP (Service Parts) Classification

This number corresponds with the individual parts index number in the figure.

b) PC Board

2. MAIN PC BOARD

Ref. No.	Part. No.	Description
IC1	EI-324536	IC HD14049BP
IC2	EI-336801	IC MB8841-564M
C1A	EC-338399	C MMY V 223M 250AC [U,E,B,S]
C1B	EC-350949	C MMY V 223M 250DC [J]
C1C	EC-338397	C MMY V 223M 125AC [C,A]
X1	EI-318384	OSC X'TAL NC-18C

Symbols for primary destination

[A] : AAL (U.S.A) [S] : SAA (Australia)
[B] : BEAB (England) [U] : U/T (Universal Area)
[C] : CSA (Canada)
[E] : CEE (Europe) [V] : VDE (Germany)
[J] : JPN (Japan) [Y] : Custom

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No. listed at right of Part No.

WARNING

⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.

AVERTISSEMENT

⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCUTITÉDE L'APPAREIL, NE REMPLACER QUE DES PIÉCES RECOMMANDEES PAR LÉ FABRICANT.

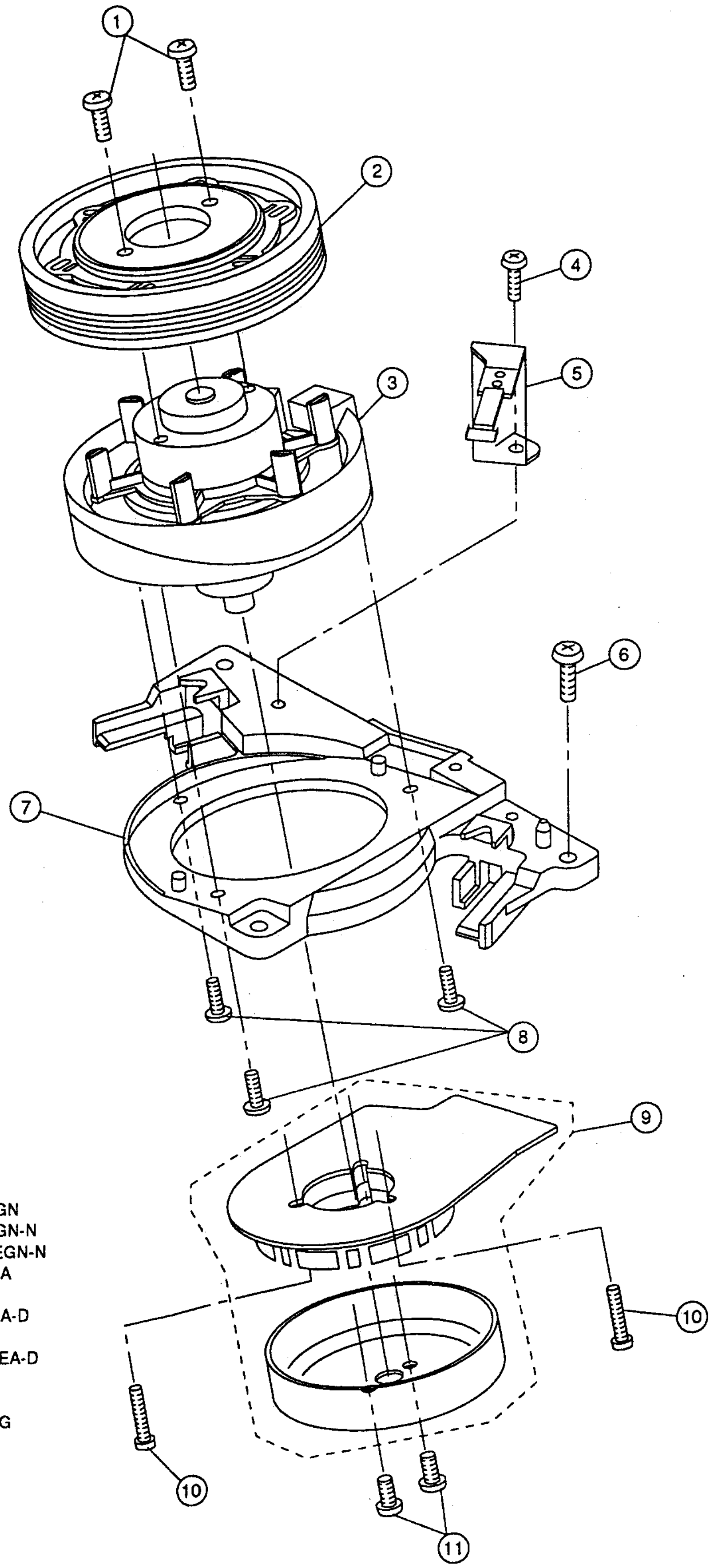
1. RECOMMENDED SPARE PARTS

We suggest you to stock the following Recommended Spare Part items listed below since they can cover most of the routine service.

Ref. No.	Part No.	Description
1	BB-421845N46	MECHA DECK G405EA
2	BL-424913N06	ARM LOADING BLK G204EA
3	BL-420054N3	ARM PINCH ROLLER PART
4	BM-424801J	GEAR MOTOR PART
5	BM-421746N	MOTOR PART
6	BM-419269J	MOTOR SCV-0602A
7	BM-419324J1	MOTOR SDV-0302A
8	⚠ BT-428159J	TRANS POW V1203EGN
9	BV-424919N08	CASSETTE LOAD BLK G204EA
10	BV-424907N00	HOLDER GEAR BLK G405EA
11	BV-424914N01	LEADER(S) BLK G204EA
12	BV-424915N01	LEADER(T) BLK G204EA
13	BV-V1182A410E	LOWER DRUM BLK G2100EA-D [X1000]
14	BV-V1182A410C	LOWER DRUM BLK G415EA [X480]
15	BV-V1182A410D	LOWER DRUM BLK G705EA-D [X800]
16	BV-402178J	RF CONVERTER MDLK6E810A EGN
17	BV-V1182A420M	UPPER DRUM BLK X1000EGN-N
18	BV-V1182A420K	UPPER DRUM BLK X480EGN
19	BV-V1182A420L	UPPER DRUM BLK X800EGN-N
20	ED-390012J	D LED GL4800 INFRARED
21	ED-425270J	D LED GL5ED44 RED,GREEN
22	ED-422251J	D LED GL528VTB INFRARED T05
23	ED-400876J	D LED SLR-34VW3F RED
24	⚠ ED-422244J	D SCHOTTKY RK34LF-B2 S12
25	⚠ ED-422462J	D SCHOTTKY RK49 015-302 S15
26	⚠ ED-428162J	D SCHOTTKY 1S30-E T26 [X480,X800]
27	ED-386031J	D SILICON CHIP MA110-TW
28	ED-419028J	D SILICON CHIP MA152WK TXT08E
29	ED-418976J	D SILICON EG01CW T05 1000/0.5A
30	⚠ ED-425207J	D SILICON ERA18-02 T26
31	ED-307572	D SILICON H 1SS131
32	ED-511907	D SILICON 1N4002 100/1.0A
33	⚠ ED-422125J	D SILICON 1N4006 T26 800/1.0A
34	ED-391005J	D ZENER H HZS12B1
35	ED-427412J	D ZENER H HZS24-3 T26
36	ED-402181J	D ZENER H HZS3A1 [X480]
37	ED-427363J	D ZENER H HZS4B1 T26 [X480,X800]
38	ED-397233J	D ZENER H HZS5C3
39	ED-387919J	D ZENER H HZS6A1L
40	ED-387783J	D ZENER H HZS6C3L
41	ED-397614J	D ZENER H HZS9A3L T26 [X1000]
42	ED-425712J	D ZENER H MTZJ18B T26
43	ED-418996J	D ZENER H MTZJ3.0A T26
44	ED-418722J	D ZENER H MTZJ4.3A T26 [X480,X800]
45	ED-405604J	D ZENER H MTZJ4.3C T26
46	ED-404221J	D ZENER H MTZJ6.2B T26
47	ED-427218J	D ZENER H MTZJ6.2C T26
48	EE-428206J	TV TUNER TEKE1-115A EGN
49	⚠ EF-427351J	FUSE 215 T 250V 2.50A
50	EI-425189J	IC AN3317K
51	EI-416607J	IC AN3386NK-A
52	EI-428240J	IC AN3558NFBS
53	EI-425194J	IC AN3963NFBPA
54	EI-422131J	IC AN7809F
55	EI-386468J	IC BA3308
56	EI-389644J	IC BA403
57	EI-364896	IC BA6138 [X800]
58	EI-366892	IC BA7025L
59	EI-385995J	IC BA7755A
60	EI-425537J	IC LA6358NM
61	EI-414861J	IC LA7285
62	EI-427370J	IC LA7577
63	EI-403233J	IC LB1641
64	EI-428000J	IC LC74761-9076
65	EI-389622J	IC L5631
66	EI-422375J	IC MC14013BFR2
67	EI-410451J	IC MC14053BFR2
68	EI-428143J	IC MM1115XS [X480]
69	EI-428189J	IC MM1116XS
70	EI-425359J	IC MM1117XS [X800,X1000]
71	EI-428151J	IC MSM7450-50MS-KR1
72	EI-428245J	IC M37770M4H-110FP GXEGSY1
73	EI-425327J	IC M38173M6-281FP ATXOPS1 [X480,X800]
74	EI-428244J	IC M38173M6-297FP GXEGOP1 [X480,X800]
75	EI-422218J	IC M51494L [X1000]
76	EI-422443J	IC M51646SP
77	EI-400756J	IC NJM4558L-B [X1000]
78	⚠ EI-416778J	IC NJM4558LA
79	EI-418149J	IC TA75S393F
80	⚠ EI-422128J	IC TA76431S T05
81	EI-418150J	IC TC7S86F
82	EI-425190J	IC TDA8204
83	EI-425191J	IC TDA8205
84	EI-416921J	IC TDA9830
85	EI-428137J	IC TL8828P
86	EI-394868J	IC UPC1820CA
87	EI-416691J	IC XC61AC3002TH T05 [X480,X800]
88	EI-425668J	IC 24LC02B/SN
89	EI-401069J	OSC CE CSA1.480MK 1.480MHZ
90	EI-394870J	OSC CE CSB500F23 504.5KHZ
91	EI-368829	OSC CE CSB512P
92	EI-405327J	OSC CE CST6.00MGW 6.000MHZ
93	EI-425184J	OSC X'TALAPS-1007 11.648MHZ
94	EI-425240J	OSC X'TALAPS-1011A 16.000MHZ
95	EI-416872J	OSC X'TALAPS1004A 17.734475MH
96	EI-428190J	OSC X'TALAPS1014 13.571MHZ
97	EI-368825M	OSC X'TAL C-002RX 32.768KHZ [X480,X800]
98	EI-410263J	OSC X'TAL HC-49/U 14.318180MHZ
99	EI-428208J	OSC X'TAL HC-49/U 3.579545MHZ
100	EI-422510J	OSC X'TAL HC-49/U 4433.619KHZ
101	EM-428145J	IND FL FV662G CHARACTER
102	EM-428147J1	IND FL FV663G CHARACTER
103	EM-428135J	IND FL FV664G CHARACTER [FL1]
104	⚠ ER-307565	R FUSE H S10 ERD2FC 1/4W 6R8J
105	⚠ ER-425269J	R FUSE H S10 RF25SC 1/4W R47K
106	⚠ ER-400728J	R FUSE V T05 RF25SCVTP1/4WR12K
107	⚠ ER-418648J	R FUSE V T05 RF25SCVTP1/4WR24K
108	ES-391710J	SW LEAF SPPB51 01-1 NO [SW1]
109	ES-392384J	SW LEAF SPPB62 01-1 [SW301][SW302]
110	ES-426275J	SW MICRO ESE11SV1A
111	ES-419326J1	SW MODE SELECT MMS00202ZMB0
112	ES-425239J	SW TACT EVQ PBE 07K
113	ES-408404J	SW TACT EVQ 235 07K T05
114	ES-411687J	SW TACT EVQ-PAE05R
115	ES-396610J	SW TACT SOR-122HS T05
116	ET-425627J	DETECTOR SBX1790-R2 [REMOCON DETECTOR]
117	ET-425638J	DETECTOR SBX1815-R2 [REMOCON DETECTOR]
118	⚠ ET-422113J	PHOTO COUPLER PS2561-1-V
119	ET-427131J	TR C.DTA115TK
120	ET-421988J	TR C.UN211L TXT08E
121	ET-421973J	TR C.UN2110 R,S TXT08E
122	ET-421977J	TR C.UN2113 TXT08E
123	ET-421979J	TR C.UN2115 R,S TXT08E [X1000]
124	ET-422003J	TR C.UN221L TXT08E

Ref. No.	Part No.	Description
125	ET-421989J	TR C.UN2210 R,S TXT08E
126	ET-421990J	TR C.UN2211 TXT08E
127	ET-414836J	TR C.UN2213 TXT08E
128	ET-421993J	TR C.UN2215 R,S TXT08E
129	ET-416932J	TR C.2SB709A R,S TXT08E
130	ET-416987J	TR C.2SC2404 C,D TXT08E
131	ET-416933J	TR C.2SD601A R,S TXT08E
132	ET-415140J	TR DTA115TS T05 [X480,X800]
133	ET-373391	TR DTC143ZS
134	ET-366413	TR FET 2SJ105 GR [X800,X1000]
135	⚠ ET-428170J	TR FET 2SK2056
136	ET-390010J	TR PHOTO PT4800
137	ET-390009J	TR PHOTO PT493F
138	ET-421938J	TR UN411L T05
139	ET-419707J	TR UN4110 R,S T05 [X480]
140	ET-419708J	TR UN4111 T05
141	ET-419709J	TR UN4112 T05 [X800,X1000]
142	ET-419710J	TR UN4113 T05
143	ET-422254J	TR UN4117 R,S T05 [X480,X800]
144	ET-364040	TR UN421D
145	ET-421952J	TR UN421L T05
146	ET-422031J	TR UN4210 R,S T05 [X480,X800]
147	ET-421939J	TR UN4211 T05
148	ET-421940J	TR UN4212 T05 [X800,X1000]
149	ET-421941J	TR UN4213 T05
150	ET-421943J	TR UN4214 T05
151	ET-421944J	TR UN4215 R,S T05
152	ET-421945J	TR UN4216 R,S T05
153	ET-428156J	TR UN6111 T05
154	ET-428153J	TR UN6211 T05
155	ET-428157J	TR UN6213 T05
156	ET-353899	TR 2SA1317 S,T,U
157	ET-404498J	TR 2SB1306 Q,R T05
158	ET-428155J	TR 2SB1320A T05
159	ET-388338J	TR 2SB1425 S,E [X800,X1000]
160	ET-422154J	TR 2SB1426 Q,R T05
161	ET-414816J	TR 2SC2668 Y T05
162	ET-375777	TR 2SC2926S P,Q
163	ET-397160J	TR 2SC3330 R,S,T,U,V
164	ET-425262J	TR 2SD1758 Q,R (CPT F5)
165	ET-428154J	TR 2SD1991A T05
166	⚠ ET-422129J	TR 2SD2132 U,V T05
167	⚠ ET-416588J	TR 2SD2166 Q,R,S
168	ET-422511J	TR 2SD2375 P
169	EX-405691J	THERMISTOR NTH5D332KA
170	⚠ EX-412521J	THERMISTOR 911P83E101NH07 T05
171	HE-422168J	HEAD E HVFHF0032A
172	HR-416732J	HEAD COMBO HVMZA1161A
173	MB-420053N	BELT CAPSTAN
174	MI-420023N3	ARM IDLER PART
175	MI-420145N1	DISK CLUCH(2)PART
176	MI-420037N	DISK COUPLING
177	ML-420033N1	ARM COUPLING
178	ML-420170N	ARM LID OPENER
179	ML-420097N1	ARM LOADING BRAKE
180	ML-420068N2	ARM REVIEW PART
181	ML-420006N2	ARM TENSION PART
182	ML-420126N1	CAPSTAN BRAKE PART
183	ML-420099N1	LEVER M BRAKE
184	ML-420061N2	LEVER PINCH
185	ML-420133N1	LEVER REC-S
186	ML-420416N3	LEVER TENSION(1)PART
187	ML-420138N1	LEVER WINDER PART
188	ML-420086N1	MAIN BRAKE(S)PART
189	ML-420089N1	MAIN BRAKE(T)PART
190	ML-420092N1	REVIEW BRAKE PART
191	ML-420110N1	SLIDER PINCH
192	ML-420100N2	SLIDER TRIGGER
193	MR-420109N	HOLDER THRUST WORM
194	MR-420106N	PULLEY TRIGGER
195	MR-420022N	ROLLER IMPEDANCE
196	MT-424632N1	DISK(2) PART
197	MZ-420064N1	GEAR CAM HELICAL
198	MZ-420122N	GEAR CAM MAIN
199	MZ-420328N2	GEAR CAM PINCH(2)
200	MZ-420035N	GEAR COUPLING
201	MZ-420124N2	GEAR FRONT LOADING
202	MZ-420067N	GEAR PINCH
203	MZ-424917N01	GEAR TOGGLE (S) BLK G204EA
204	MZ-424916N02	GEAR TOGGLE (T) BLK G204EA
205	MZ-420123N	GEAR WORM WHEEL
206	MZ-420132N2	PRISM LED
207	MZ-420016N1	TENSION BAND PART
208	ZG-420036N	SP PUSH COUPLING
209	ZG-420105N	SP TRIGGER

HEAD DRUM BLOCK

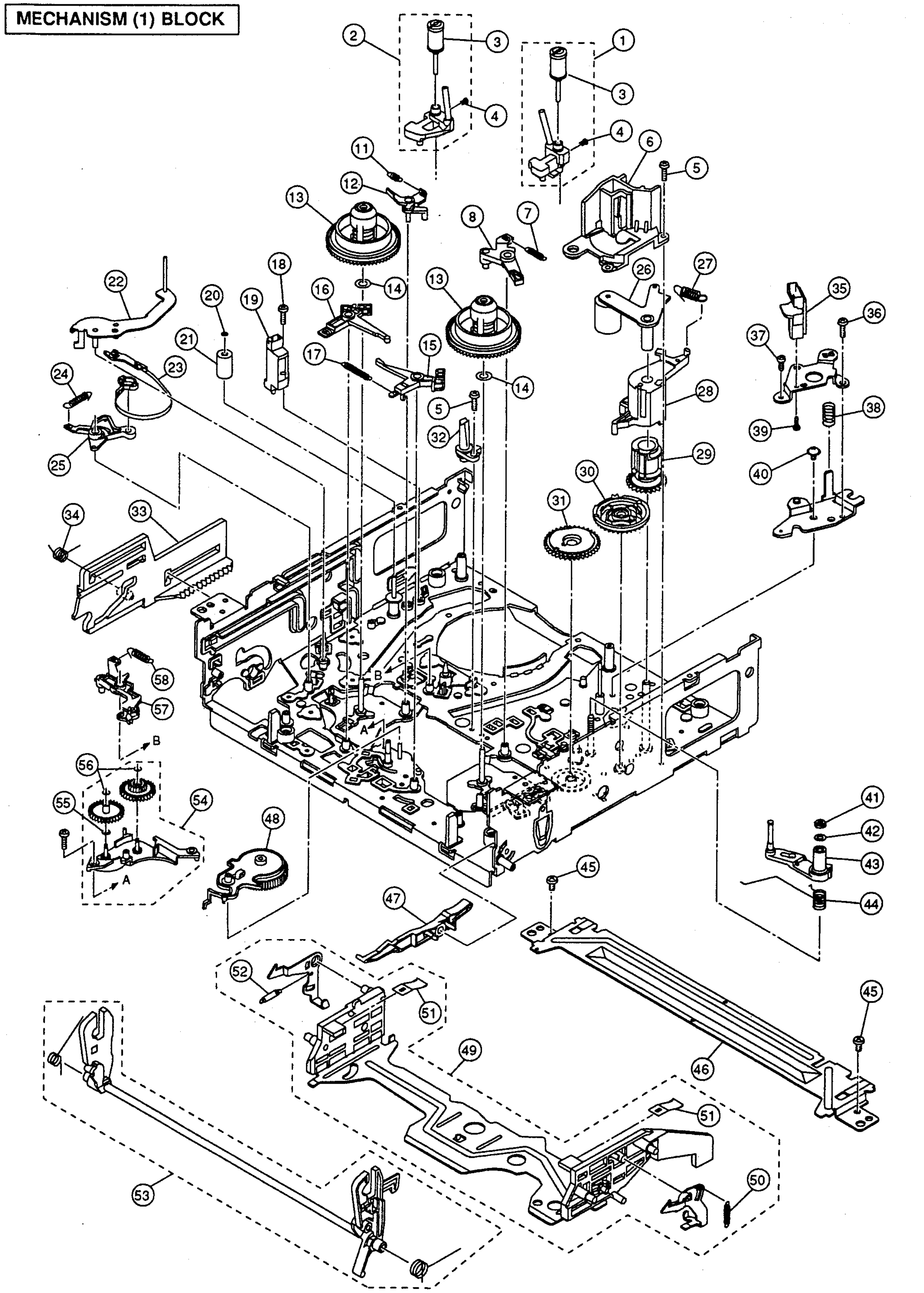


2. HEAD DRUM BLOCK

Ref. No.	Part No.	Description
1	ZS-321298	BID30X08STL CMT
2-A	BV-V1182A420K	UPPER DRUM BLK X480EGN
2-B	BV-V1182A420L	UPPER DRUM BLK X800EGN-N
2-C	BV-V1182A420M	UPPER DRUM BLK X1000EGN-N
3-A	BV-V1182A410C	LOWER DRUM BLK G415EA [X480]
3-B	BV-V1182A410D	LOWER DRUM BLK G705EA-D [X800]
3-C	BV-V1182A410E	LOWER DRUM BLK G2100EA-D [X1000]
4	ZS-427136J	ST BID30X05STL CMT
5	VT-418700J1	EARTH BRUSH (2) PART AG
6	ZS-336714	ST BID30X12STL CMT
7	MA-424961J	CHASSIS DRUM(2)
8	ZS-563444	BID26X08STL CMT
9	BM-419324J1	MOTOR SDV-0302A
10	ZS-467796	PAN26X12STL CMT
11	ZS-379350	PAN30X06STL CMT

NOTE :
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

MECHANISM (1) BLOCK



3. MECHANISM (1) BLOCK

Ref. No.	Part No.	Description
1	BV-424915N01	LEADER(T) BLK G204EA
2	BV-424914N01	LEADER(S) BLK G204EA
3	VT-387394J1	GUIDE ROLLER D8 PART
4	ZS-418616J	PAN20X2.8STL CMT PS1 LEADER
5	ZS-383761J	ST BID26X06STL CMT
6	MZ-420065N2	HOLDER PINCH
7	ZG-420095N	SP PULL REVIEW BRAKE
8	ML-420092N1	REVIEW BRAKE PART
11	ZG-420098N	SP PULL LOADING BRAKE
12	ML-420097N1	ARM LOADING BRAKE
13	MT-424632N1	DISK(2) PART
14	ZW-424667N	REEL WASHER
15	ML-420089N1	MAIN BRAKE(T)PART
16	ML-420086N1	MAIN BRAKE(S)PART
17	ZG-420091N	SP PULL MAIN BRAKE
18	ZS-389950J	PT BID26X10STL CMT
19	HE-422168J	HEAD E HVFHF0032A
20	ZW-395919J	SLIT W16X035X025 PSL
21	MR-420022N	ROLLER IMPEDANCE
22	ML-420006N2	ARM TENSION PART
23	MZ-420016N1	TENSION BAND PART
24	ZG-420015N1	SP PULL TENSION(1)
25	ML-420416N3	LEVER TENSION(1)PART
26	BL-420054N3	ARM PINCH ROLLER PART
27	ZG-420062N	SP PULL PINCH
28	ML-420061N2	LEVER PINCH
29	MZ-420064N1	GEAR CAM HELICAL
30	MZ-420328N2	GEAR CAM PINCH(2)
31	MZ-420067N	GEAR PINCH
32	MZ-420132N2	PRISM LED
33	ML-420168N3	SLIDER FRONT LOADING
34	ZG-420169N1	SP TORSION SLIDER
35	HR-416732J	HEAD COMBO HVMZA1161A
36	ZS-550708	PAN26X08STL NI3
37	ZS-422170J	PAN26X07STL CMT CP
38	ZG-424556J	SP PUSH A/C(2)
39	ZS-418480J	PAN20X2.2STL BZN PS1
40	ZS-362533	ST PAN30X05STL CMT C080
41	ZW-350839	N30 NYLON
42	ZW-324417	PW31X060X050PSL
43	ML-420068N2	ARM REVIEW PART
44	ZG-420071N1	SP TORSION REVIEW
45	ZS-358936	ST BID30X06STL CMT
46	MZ-420172N2	PLATE UPPER
47	ML-420170N	ARM LID OPENER
48	MI-420023N3	ARM IDLER PART
49	BV-424919N08	CASSETTE LOAD BLK G204EA
50	ZG-420167N1	SP PULL DUMPER(T)
51	ZG-420162N	SP PLATE UPPER
52	ZG-420166N	SP PULL DUMPER(S)
53	BL-424913N06	ARM LOADING BLK G204EA
54	BV-424907N00	HOLDER GEAR BLK G405EA
55	ZW-418619J	PW16X035X025PSL
56	ZW-418855J	SLIT W1.25X040X025PSL
57	ML-420138N1	LEVER WINDER PART
58	ZG-420144N	SP PULL WINDER
59	BB-421845N46	MECHA DECK G405EA

NOTE :

Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

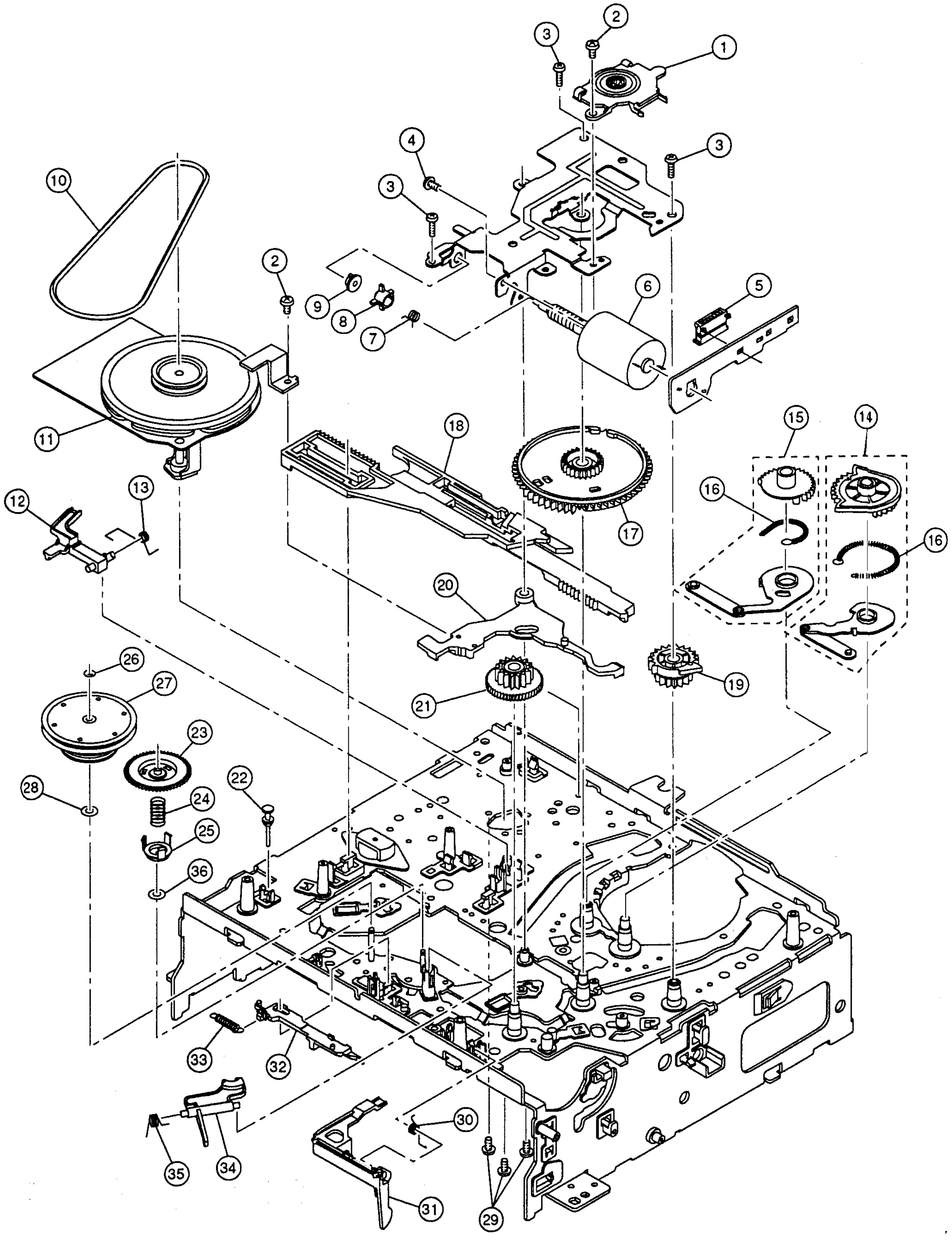
4. MECHANISM (2) BLOCK

Ref. No.	Part No.	Description
1	ES-419326J1	SW MODE SELECT MMS00202ZMB0
2	ZS-358936	ST BID30X06STL CMT
3	ZS-389950J	PT BID26X10STL CMT
4	ZS-425981	BID30X03STL CMT
5	EJ-422169J	SOCKET TKC-M07X-A1 7P
6	BM-421746N	MOTOR PART
7	ZG-420105N	SP TRIGGER
8	MR-420106N	PULLEY TRIGGER
9	MR-420109N	HOLDER THRUST WORM
10	MB-420053N	BELT CAPSTAN
11	BM-419269J	MOTOR SCV-0602A
12	ML-420126N1	CAPSTAN BRAKE PART
13	ZG-420129N1	SP TORSION C.B
14	MZ-424917N01	GEAR TOGGLE (S) BLK G204EA
15	MZ-424916N02	GEAR TOGGLE (T) BLK G204EA
16	ZG-420117N	SP PULL TOGGLE
17	MZ-420122N	GEAR CAM MAIN
18	ML-420110N1	SLIDER PINCH
19	MZ-420124N2	GEAR FRONT LOADING
20	ML-420099N1	LEVER M BRAKE
21	MZ-420123N	GEAR WORM WHEEL
22	MZ-420135N	SLIDE S-SW
23	MZ-420035N	GEAR COUPLING
24	ZG-420036N	SP PUSH COUPLING
25	MI-420037N	DISK COUPLING
26	ZW-418816J	SLIT W21X050X050PSL
27	MI-420145N1	DISK CLUCH(2)PART
28	ZW-389923J	PW26X060X050PSL
29	ZS-432843	PAN26X04STL CMT
30	ZG-420134N1	SP TORSION REC-S
31	ML-420133N1	LEVER REC-S
32	ML-420100N2	SLIDER TRIGGER
33	ZG-420101N	SP PULL TRIGGER
34	ML-420033N1	ARM COUPLING
35	ZG-420034N2	SP TORSION COUPLING
36	ZW-321317	PW21X040X050PSL

NOTE :

Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

MECHANISM (2) BLOCK



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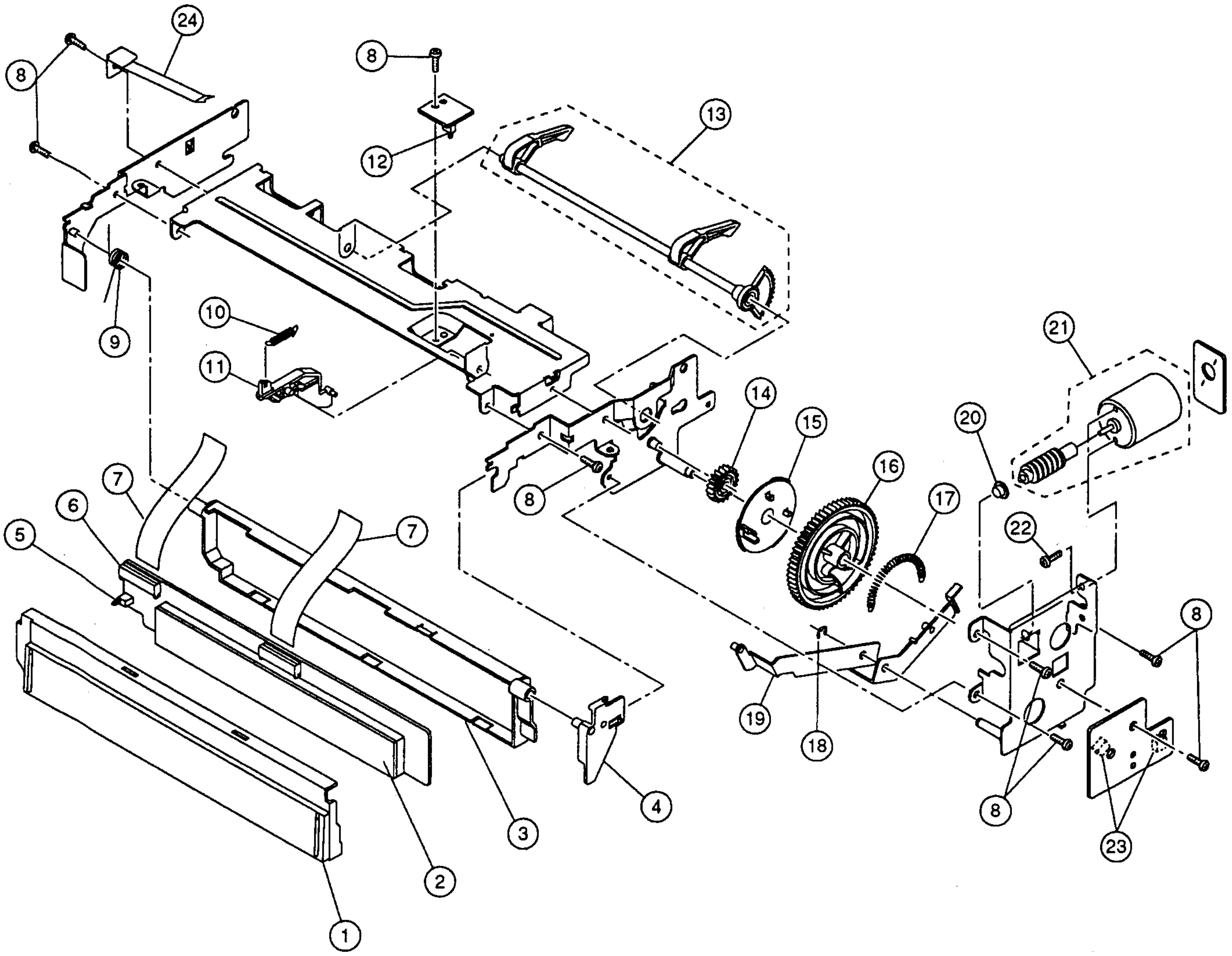
MECHANISM (3) BLOCK (X1000EGN-N)



5. MECHANISM (3) BLOCK (X1000EGN-N)

Ref. No.	Part No.	Description
1	SC-420361J	CASE MASK
2	EM-428135J	IND FL FV664G CHARACTER [FL1]
3	SZ-420362J2	HOLDER FLD
4	SZ-420366J	HOLDER MASK
5	ES-391710J	SW LEAF SPPB51 01-1 NO [SW1]
6	EJ-416651J	SOCKET 00 6216 016 100 16P [P49][P50]
7	EW-425286J	CORD FFC BD SML2CD L130 16P
8	ZS-358936	ST BID30X06STL CMT
9	ZG-420367J	SP TORSION MASK
10	ZG-420370J1	SP PULL STOPPER
11	ML-420368J2	ARM STOPPER
12	ES-391710J	SW LEAF SPPB51 01-1 NO [SW101]
13	MS-420338J	SHAFT ARM PART
14	MZ-420348J	GEAR REDUCTION
15	MZ-420346J	GEAR SLIDE
16	MZ-420345J	GEAR CAM
17	ZG-420347J	SP PULL GEAR
18	ZW-410051	RETAINING RING E250SUP CMT
19	ML-420363J	ARM MASK PART
20	MR-387406J	HOLDER THRUST WORM
21	BM-424801J	GEAR MOTOR PART
22	ZS-425981	BID30X03STL CMT
23	ES-392384J	SW LEAF SPPB62 01-1 [SW301][SW302]
24	MZ-420372J	EARTH EJECT

NOTE :

Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

6. P.C. BOARD BLOCK

Ref. No.	Part No.	Description
1-A	BA-V1203A600B	PC(#) MAIN BLK X480EGN
1-B	BA-V1203A600A	PC(#) MAIN BLK X800EGN-N
1-C	BA-V1203A600C	PC(#) MAIN BLK X1000EGN-N
2-A	BA-V1184A610G	PC PRE 3/4 BLK X480EGN
2-B	BA-V1203A610A	PC PRE-AUDIO BLK X800EGN-N
2-C	BA-V1203A610B	PC PRE-AUDIO BLK X1000EGN-N
3	BA-V1194A630A	PC(#) OPERATION BLK X1000EGN-N
4-A	BA-V1203A500A	PC(#) POWER BLK X800EGN-N [X480,X800]
4-B	BA-V1203A500B	PC(#) POWER BLK X1000EGN-N [X1000]
5-A	BA-V1203A760A	PC EGN BLK X800EGN-N [X480,X800]
5-B	BA-V1203A760B	PC EGN BLK X1000EGN-N [X1000]
6	BA-V1190A650D	PC D-NICAM BLK X800EGN-N [X800,X1000]
7-A	BA-V1203A690B	PC(#)VIF-EGN BLK X480EGN [X480]
7-B	BA-V1203A700A	PC(#)VIF-HIFI BLK X800EGN-N [X800,X1000]

PC (#) MAIN BLK CONSISTS OF FOLLOWING P.C. BOARDS.

- MAIN P.C. BOARD
- TR P.C. BOARD
- FRONT P.C. BOARD (X800EGN-N ONLY)

PC (#) OPERATION BLK X1000EGN-N CONSISTS OF FOLLOWING P.C. BOARD.

- OPERATION (A) P.C. BOARD

PC (#) POWER BLK CONSISTS OF FOLLOWING P.C. BOARDS.

- POWER (A) P.C. BOARD
- POWER (B) P.C. BOARD

PC (#) VIF-EGN BLK CONSISTS OF FOLLOWING P.C. BOARDS.

- VIF-EGN (A) P.C. BOARD
- VIF-EGN (B) P.C. BOARD

7. MAIN P.C. BOARD

Ref. No.	Part No.	Description
C501	EC-416655J	C DBL.LAYER T05 FM0H473Z 5.5DC [X480,X800]
D1	ED-307572	D SILICON H 1SS131
D2	ED-307572	D SILICON H 1SS131
D4	ED-307572	D SILICON H 1SS131
D5	ED-307572	D SILICON H 1SS131
D6	ED-387919J	D ZENER H HZS6A1L
D7	ED-307572	D SILICON H 1SS131
D8	ED-307572	D SILICON H 1SS131
D9	ED-307572	D SILICON H 1SS131
D10	ED-307572	D SILICON H 1SS131 [X480]
D11	ED-307572	D SILICON H 1SS131
D12	ED-307572	D SILICON H 1SS131
D13	ED-307572	D SILICON H 1SS131
D14	ED-307572	D SILICON H 1SS131
D15	ED-307572	D SILICON H 1SS131
D16	ED-307572	D SILICON H 1SS131
D201	ED-397233J	D ZENER H HZS5C3
D202	ED-307572	D SILICON H 1SS131
D301	ED-307572	D SILICON H 1SS131
D303	ED-307572	D SILICON H 1SS131 [X480]
D304	ED-307572	D SILICON H 1SS131 [X480]
D305	ED-402181J	D ZENER H HZS3A1 [X480]
D308	ED-307572	D SILICON H 1SS131 [X480]
D309	ED-307572	D SILICON H 1SS131 [X480]
D340	ED-307572	D SILICON H 1SS131 [X800,X1000]
D341	ED-307572	D SILICON H 1SS131 [X800,X1000]
D350	ED-307572	D SILICON H 1SS131 [X800]
D401	ED-307572	D SILICON H 1SS131
D402	ED-405604J	D ZENER H MTZJ4.3C T26
D403	ED-307572	D SILICON H 1SS131
D404	ED-511907	D SILICON 1N4002 100/1.0A
D405	ED-511907	D SILICON 1N4002 100/1.0A
D406	ED-511907	D SILICON 1N4002 100/1.0A
D407	ED-511907	D SILICON 1N4002 100/1.0A
D408	ED-422251J	D LED GL528VTB INFRARED T05
D409	ED-390012J	D LED GL4800 INFRARED
D410	ED-390012J	D LED GL4800 INFRARED
D411	ED-427218J	D ZENER H MTZJ6.2C T26
D501	ED-307572	D SILICON H 1SS131 [X480,X800]
D502	ED-307572	D SILICON H 1SS131 [X480,X800]
D503	ED-418722J	D ZENER H MTZJ4.3A T26 [X480,X800]
D504	ED-427363J	D ZENER H HZS4B1 T26 [X480,X800]
D601	ED-307572	D SILICON H 1SS131
D602	ED-307572	D SILICON H 1SS131
D603	ED-307572	D SILICON H 1SS131
D610	ED-307572	D SILICON H 1SS131 [X800,X1000]
D671	ED-400876J	D LED SLR-34VW3F RED
D672	ED-307572	D SILICON H 1SS131
D681	ED-307572	D SILICON H 1SS131
D682	ED-307572	D SILICON H 1SS131
D691	ED-307572	D SILICON H 1SS131
D692	ED-307572	D SILICON H 1SS131
FL2	EH-373919J1	FILTER CE TPS6.0MB
FL3	EH-370812J1	FILTER CE SFE4.5MB
FL4	EH-373920J1	FILTER CE SFE5.5MB
FL5	EH-373921J1	FILTER CE SFE6.0MB
FL6	EH-358973J1	FILTER CE SFE6.5MB 6.50MHZ
FL300-A	EO-422331J	COIL OSC 1 V1182KN 70.0KHZ [X480]
FL300-B	EO-418829J	COIL OSC 1 6062 70.0KHz [X800]

Ref. No.	Part No.	Description
FL300-C	EO-418830J	COIL OSC 1 6063 70.0KHZ [X1000]
FL601	EH-425230J	FILTER LC LP TCV-5012 [X480]
FR201	⚠ ER-418648J	R FUSE V T05 RF25SCVTP1/4WR24K
FR202	⚠ ER-418648J	R FUSE V T05 RF25SCVTP1/4WR24K
FR203	⚠ ER-425269J	R FUSE H S10 RF25SC 1/4W R47K
IB502	EH-397099J	COMP R RGLE7X 473J [X480,X800]
IB503	EH-383057J	COMP R RGLE5X 473J [X480,X800]
IC1	EI-389622J	IC L5631
IC201	EI-422131J	IC AN7809F
IC301	EI-364896	IC BA6138 [X800]
IC401	EI-428245J	IC M37770M4H-110FP GXEGSY1
IC402	EI-425668J	IC 24LC02B/SN
IC403	EI-425537J	IC LA6358NM
IC404	EI-403233J	IC LB1641
IC501	EI-428244J	IC M38173M6-297FP GXEGOP1 [X480,X800]
IC502	EI-416691J	IC XC61AC3002TH T05 [X480,X800]
IC601	EI-428151J	IC MSM7450-50MS-KR1
IC602	EI-428240J	IC AN3558NFBS
IC603	EI-410451J	IC MC14053BFR2
IC604	EI-422375J	IC MC14013BFR2
IC605	EI-418149J	IC TA75S393F
IC606	EI-418150J	IC TC7S86F
IC741	EI-366892	IC BA7025L
L1	EO-428476J	COIL FIX 1 LF-5.0S T26 R33K
L3	EO-410091J	COIL FIX 1 SPT0203SA T26 100J
L4	EO-381192J	COIL FIX 1 EL0405SKI 270K
L5	EO-416716J	COIL FIX 1 EL0405RA T05 8R2J
L6	EO-387803J	COIL FIX 1 EL0405SKI 221K
L7	EO-410091J	COIL FIX 1 SPT0203SA T26 100J
L301	EO-390716J	COIL FIX 1 LHL06TB T05 272J
L501	EO-410256J	COIL FIX 1 EL0405RA T05 100J [X480,X800]
L502	EO-410256J	COIL FIX 1 EL0405RA T05 100J [X480,X800]
L600	EO-410097J	COIL FIX 1 SPT0203SA T26 330J
L601	EO-410100J	COIL FIX 1 SPT0203SA T26 560J
L602	EO-410094J	COIL FIX 1 SPT0203SA T26 180J
L603	EO-381193J	COIL FIX 1 EL0405SKI 271K
L604	EO-410098J	COIL FIX 1 SPT0203SA T26 390J
L605	EO-403270J	COIL FIX 1 EL0405RA T05 101J
L606	EO-381195J	COIL FIX 1 EL0405SKI 331K
L607	EO-410090J	COIL FIX 1 SPT0203SA T26 8R2J
L608-A	EO-410103J	COIL FIX 1 SPT0203SA T26 151J [X480]
L608-B	EO-376616	COIL FIX 1 LF-5.0S F05 221K [X800,X1000]
L609	EO-410101J	COIL FIX 1 SPT0203SA T26 680J
L610	EO-414622J	COIL FIX 1 EL0607RA T05 101K
L611	EO-414622J	COIL FIX 1 EL0607RA T05 101K
L612	EO-403270J	COIL FIX 1 EL0405RA T05 101J
L613	EO-410097J	COIL FIX 1 SPT0203SA T26 330J
L614	EO-410089J	COIL FIX 1 SPT0203SA T26 6R8J
L615	EO-410103J	COIL FIX 1 SPT0203SA T26 151J
L616	EO-410094J	COIL FIX 1 SPT0203SA T26 180J
L617	EO-410098J	COIL FIX 1 SPT0203SA T26 390J
L620	EO-410101J	COIL FIX 1 SPT0203SA T26 680J
L691	EO-404430J	COIL FIX 1 SPT0203SA T26 101J
L692	EO-410090J	COIL FIX 1 SPT0203SA T26 8R2J
L693	EO-414622J	COIL FIX 1 EL0607RA T05 101K
L694	EO-418521J	COIL FIX 1 LAP02TA T26 121J
L695	EO-403270J	COIL FIX 1 EL0405RA T05 101J
L697	EO-403270J	COIL FIX 1 EL0405RA T05 101J
L698	EO-410098J	COIL FIX 1 SPT0203SA T26 390J
L741	EO-368129	COIL FIX 1 TL-8 153J
L750	EO-403270J	COIL FIX 1 EL0405RA T05 101J
MD1	BV-402178J	RF CONVERTER MDLK6E810A EGN
P301	EJ-418763J	SOCKET HLEM19S-1 19P [MAIN TO PRE]
P302	EJ-405200J	SOCKET HLEM16S-1 16P [MAIN TO PRE][X800,X1000]

Ref. No.	Part No.	Description
P418	EJ-397357J	SOCKET HLEM13R-1 13P [MAIN TO OP][X1000]
P420	EJ-422178J	PLUG TKC-G08P-A1 8P [MAIN TO MECHA]
P453	EJ-422176J	PLUG TKC-M07P-B1 7P [MAIN TO MECHA]
P516	EJ-428457J	PLUG TRC-X22P-A2 22P [MAIN TO OP][X480,X800]
P517	EJ-428458J	PLUG TRC-X14P-A2 14P [MAIN TO OP][X480,X800]
P601	EJ-388344J	SOCKET HLEM9S-1 9P [MAIN TO PRE]
SF741	EH-366894J1	FILTER CE SFE-4.16MB 4.16MHZ
SW401	ES-426275J	SW MICRO ESE11SV1A
SW402	ES-426275J	SW MICRO ESE11SV1A
TR2	ET-353899	TR 2SA1317 S,T,U
TR3	ET-414816J	TR 2SC2668 Y T05
TR4	ET-416932J	TR C.2SB709A R,S TXT08E
TR5	ET-416932J	TR C.2SB709A R,S TXT08E
TR6	ET-416932J	TR C.2SB709A R,S TXT08E
TR7	ET-414836J	TR C.UN2213 TXT08E
TR8	ET-414836J	TR C.UN2213 TXT08E
TR9	ET-428153J	TR UN6211 T05
TR10	ET-428154J	TR 2SD1991A T05
TR11	ET-428154J	TR 2SD1991A T05
TR12	ET-428155J	TR 2SB1320A T05
TR13	ET-428154J	TR 2SD1991A T05
TR14	ET-428155J	TR 2SB1320A T05
TR16	ET-428156J	TR UN6111 T05
TR17	ET-428157J	TR UN6213 T05
TR18	ET-428156J	TR UN6111 T05
TR19	ET-428157J	TR UN6213 T05
TR20	ET-428156J	TR UN6111 T05
TR21	ET-428157J	TR UN6213 T05
TR22	ET-419708J	TR UN4111 T05
TR23	ET-421941J	TR UN4213 T05
TR24	ET-428156J	TR UN6111 T05 [X480]
TR25	ET-428157J	TR UN6213 T05 [X480]
TR28	ET-421938J	TR UN411L T05
TR29	ET-421941J	TR UN4213 T05
TR30	ET-421939J	TR UN4211 T05
TR31	ET-397160J	TR 2SC3330 R,S,T,U,V
TR32	ET-397160J	TR 2SC3330 R,S,T,U,V
TR33	ET-397160J	TR 2SC3330 R,S,T,U,V
TR34	ET-428154J	TR 2SD1991A T05
TR35	ET-421941J	TR UN4213 T05
TR36	ET-421941J	TR UN4213 T05
TR37	ET-421941J	TR UN4213 T05
TR50	ET-353899	TR 2SA1317 S,T,U
TR64	ET-421945J	TR UN4216 R,S T05
TR65	ET-421945J	TR UN4216 R,S T05
TR66	ET-421945J	TR UN4216 R,S T05
TR70	ET-416932J	TR C.2SB709A R,S TXT08E [X480]
TR201	ET-422154J	TR 2SB1426 Q,R T05
TR202	ET-373391	TR DTC143ZS
TR203	ET-404498J	TR 2SB1306 Q,R T05
TR301	ET-397160J	TR 2SC3330 R,S,T,U,V
TR302	ET-421944J	TR UN4215 R,S T05
TR303	ET-397160J	TR 2SC3330 R,S,T,U,V
TR304	ET-419707J	TR UN4110 R,S T05 [X480]
TR305	ET-421941J	TR UN4213 T05 [X480]
TR306	ET-421940J	TR UN4212 T05 [X800,X1000]
TR307	ET-419709J	TR UN4112 T05 [X800,X1000]
TR330	ET-353899	TR 2SA1317 S,T,U [X480]
TR340	ET-388338J	TR 2SB1425 S,E [X800,X1000]
TR401	ET-421939J	TR UN4211 T05
TR402	ET-419710J	TR UN4113 T05
TR403	ET-421941J	TR UN4213 T05

Ref. No.	Part No.	Description
TR405	ET-390009J	TR PHOTO PT493F
TR406	ET-390009J	TR PHOTO PT493F
TR407	ET-390010J	TR PHOTO PT4800
TR408	ET-390010J	TR PHOTO PT4800
TR409	ET-353899	TR 2SA1317 S,T,U
TR410	ET-419710J	TR UN4113 T05
TR411	ET-422154J	TR 2SB1426 Q,R T05
TR412	ET-421939J	TR UN4211 T05
TR413	ET-419710J	TR UN4113 T05
TR414	ET-421939J	TR UN4211 T05
TR415	ET-421939J	TR UN4211 T05
TR416	ET-397160J	TR 2SC3330 R,S,T,U,V
TR417	ET-416933J	TR C.2SD601A R,S TXT08E
TR418	ET-416932J	TR C.2SB709A R,S TXT08E
TR419	ET-421979J	TR C.UN2115 R,S TXT08E [X1000]
TR420	ET-414836J	TR C.UN2213 TXT08E [X1000]
TR421	ET-414836J	TR C.UN2213 TXT08E [X1000]
TR501	ET-421941J	TR UN4213 T05 [X480,X800]
TR502	ET-422254J	TR UN4117 R,S T05 [X480,X800]
TR503	ET-415140J	TR DTA115TS T05 [X480,X800]
TR504	ET-422031J	TR UN4210 R,S T05 [X480,X800]
TR601	ET-397160J	TR 2SC3330 R,S,T,U,V
TR602	ET-397160J	TR 2SC3330 R,S,T,U,V
TR603	ET-421944J	TR UN4215 R,S T05
TR604	ET-421941J	TR UN4213 T05
TR605	ET-421941J	TR UN4213 T05 [X800,X1000]
TR606	ET-364040	TR UN421D
TR607	ET-421944J	TR UN4215 R,S T05
TR608	ET-421941J	TR UN4213 T05
TR609	ET-397160J	TR 2SC3330 R,S,T,U,V
TR611	ET-353899	TR 2SA1317 S,T,U
TR612	ET-397160J	TR 2SC3330 R,S,T,U,V
TR613	ET-353899	TR 2SA1317 S,T,U
TR614	ET-421941J	TR UN4213 T05
TR615	ET-397160J	TR 2SC3330 R,S,T,U,V
TR616	ET-364040	TR UN421D
TR617	ET-397160J	TR 2SC3330 R,S,T,U,V
TR618	ET-421945J	TR UN4216 R,S T05
TR619	ET-421941J	TR UN4213 T05 [X800,X1000]
TR620	ET-421941J	TR UN4213 T05 [X480]
TR621	ET-397160J	TR 2SC3330 R,S,T,U,V [X480]
TR622	ET-419708J	TR UN4111 T05 [X480]
TR624	ET-421941J	TR UN4213 T05
TR625	ET-421945J	TR UN4216 R,S T05
TR626	ET-421941J	TR UN4213 T05
TR627	ET-421941J	TR UN4213 T05 [X800,X1000]
TR628	ET-421941J	TR UN4213 T05
TR629	ET-421944J	TR UN4215 R,S T05 [X800,X1000]
TR630	ET-353899	TR 2SA1317 S,T,U
TR632	ET-421941J	TR UN4213 T05
TR650	ET-353899	TR 2SA1317 S,T,U [X480]
TR670	ET-397160J	TR 2SC3330 R,S,T,U,V
TR671	ET-397160J	TR 2SC3330 R,S,T,U,V
TR672	ET-397160J	TR 2SC3330 R,S,T,U,V [X480]
TR673	ET-397160J	TR 2SC3330 R,S,T,U,V
TR674	ET-421944J	TR UN4215 R,S T05
TR689	ET-421941J	TR UN4213 T05 [X800,X1000]
TR690	ET-421941J	TR UN4213 T05 [X800,X1000]
TR691	ET-397160J	TR 2SC3330 R,S,T,U,V
TR692	ET-421941J	TR UN4213 T05
TR693	ET-397160J	TR 2SC3330 R,S,T,U,V
TR694	ET-397160J	TR 2SC3330 R,S,T,U,V
TR695	ET-419708J	TR UN4111 T05
TR696	ET-421941J	TR UN4213 T05
TR697	ET-353899	TR 2SA1317 S,T,U
TR699	ET-421941J	TR UN4213 T05
TR700	ET-421939J	TR UN4211 T05
TR701	ET-397160J	TR 2SC3330 R,S,T,U,V
TR702	ET-397160J	TR 2SC3330 R,S,T,U,V
TR703	ET-397160J	TR 2SC3330 R,S,T,U,V
TR704	ET-421977J	TR C.UN2113 TXT08E
TR711	ET-397160J	TR 2SC3330 R,S,T,U,V
TR712	ET-397160J	TR 2SC3330 R,S,T,U,V
TR713	ET-421939J	TR UN4211 T05
TR714	ET-421939J	TR UN4211 T05
TR715	ET-421939J	TR UN4211 T05
TR716	ET-397160J	TR 2SC3330 R,S,T,U,V
TR717	ET-353899	TR 2SA1317 S,T,U
TR718	ET-421941J	TR UN4213 T05
TR719	ET-421941J	TR UN4213 T05
TR747	ET-397160J	TR 2SC3330 R,S,T,U,V
TR748	ET-397160J	TR 2SC3330 R,S,T,U,V
TR749	ET-397160J	TR 2SC3330 R,S,T,U,V
TR750	ET-397160J	TR 2SC3330 R,S,T,U,V
TR751	ET-421941J	TR UN4213 T05
TR761	ET-421941J	TR UN4213 T05
TR762	ET-419708J	TR UN4111 T05
TR771	ET-397160J	TR 2SC3330 R,S,T,U,V [X480]
TR772	ET-421944J	TR UN4215 R,S T05 [X480]
TR773	ET-397160J	TR 2SC3330 R,S,T,U,V [X480]
TR798	ET-419710J	TR UN4113 T05 [X480]
TR799	ET-397160J	TR 2SC3330 R,S,T,U,V
TU1	EE-428206J	TV TUNER TEKE1-115A EGN
VR601	EV-394962J	R S-FIX H T05EVNDXAA03 0.1W102
VR602	EV-389478J	R S-FIX H T05EVNDXAA03 0.1W153
VR603	EV-389489J	R S-FIX H T05EVNDXAA03 0.1W472
VR604	EV-389489J	R S-FIX H T05EVNDXAA03 0.1W472
VR605	EV-389476J	R S-FIX H T05EVNDXAA03 0.1W103
VR606	EV-389478J	R S-FIX H T05EVNDXAA03 0.1W153
VR691	EV-397433J	R S-FIX H T05EVNDXAA03 0.1W152
X1	EI-368829	OSC CE CSB512P
X2	EI-401069J	OSC CE CSA1.480MK 1.480MHZ
X401	EI-425240J	OSC X'TAL APS-1011A 16.000MHZ
X501	EI-368825M	OSC X'TAL C-002RX 32.768KHZ [X480,X800]
X502	EI-425327J	IC M38173M6-281FP ATX0PS1 [X480,X800]
X601	EI-422510J	OSC X'TAL HC-49/U 4433.619KHZ
X602	EI-428208J	OSC X'TAL HC-49/U 3.579545MHZ
1	SZ-426915J	HOLDER S/E SENSOR 2
2	SZ-420136J	HOLDER PHOTO SENSOR
3	SZ-423208J	HOLDER LED

8. TR P.C. BOARD

Ref. No.	Part No.	Description
TR499	ET-422511J	TR 2SD2375 P

9. VIF-EGN (A) P.C. BOARD (X480EGN)

Ref. No.	Part No.	Description
FL1	EH-363276J1	FILTER CE TPS4.5MB2
FL2	EH-428045J	FILTER CE TPWA01B 6.000MHZ
FL3	EH-368948J1	FILTER CE TPS5.5MW 5.5000MHZ
FL4	EH-394874J	FILTER CE SAF38.9MZA70Z
FL6	EH-394875J	FILTER CE SAF32.4MB50P
IC1	EI-394868J	IC UPC1820CA
IC2	EI-416921J	IC TDA9830
L1	EO-410255J	COIL FIX 1 EL0405RA T05 470J
L11	EO-410256J	COIL FIX 1 EL0405RA T05 100J
L21	EO-410256J	COIL FIX 1 EL0405RA T05 100J
L22	EO-428462J	COIL FIX 1 EL0405RA T05 6R8J
L23	EO-416716J	COIL FIX 1 EL0405RA T05 8R2J
L61	EO-428463J	COIL FIX 1 EL0405RA T05 2R7J
L71	EO-410256J	COIL FIX 1 EL0405RA T05 100J
L81	EO-403270J	COIL FIX 1 EL0405RA T05 101J
TR1	ET-416933J	TR C.2SD601A R,S TXT08E
TR2	ET-414836J	TR C.UN2213 TXT08E
TR3	ET-414836J	TR C.UN2213 TXT08E
TR4	ET-414836J	TR C.UN2213 TXT08E
TR5	ET-422003J	TR C.UN221L TXT08E
TR6	ET-421988J	TR C.UN211L TXT08E
TR7	ET-414836J	TR C.UN2213 TXT08E
TR8	ET-416933J	TR C.2SD601A R,S TXT08E
TR9	ET-416932J	TR C.2SB709A R,S TXT08E
TR10	ET-416987J	TR C.2SC2404 C,D TXT08E
TR11	ET-416987J	TR C.2SC2404 C,D TXT08E
TR13	ET-416933J	TR C.2SD601A R,S TXT08E
TR21	ET-414836J	TR C.UN2213 TXT08E
TR22	ET-416932J	TR C.2SB709A R,S TXT08E
TR23	ET-416987J	TR C.2SC2404 C,D TXT08E
VL1	EO-416923J	COIL TUN 1 V1173-031 VCO
VL2	EO-416925J	COIL TUN 1 V1173-032 AFT
VL3	EO-428167J	COIL TUN 1 V1203-045
VR1	EV-403988J	R S-FIX V T05EVNDCAA03 0.1W102
VR2	EV-389476J	R S-FIX H T05EVNDXAA03 0.1W103
X1	EI-394870J	OSC CE CSB500F23 504.5KHZ

10. VIF-EGN (B) P.C.BOARD (X480EGN)

Ref. No.	Part No.	Description
D90	ED-307572	D SILICON H 1SS131
FL7	EH-373921J1	FILTER CE SFE6.0MB
IC3	EI-389644J	IC BA403
L91	EO-410256J	COIL FIX 1 EL0405RA T05 100J
TR91	ET-416933J	TR C.2SD601A R,S TXT08E
TR92	ET-414836J	TR C.UN2213 TXT08E
VL91	EO-416927J	COIL TUN 1 V1173-034 6.0

11. VIF-HIFI P.C. BOARD (X800, X1000EGN-N)

Ref. No.	Part No.	Description
FL1	EH-363276J1	FILTER CE TPS4.5MB2
FL2	EH-428045J	FILTER CE TPWA01B 6.000MHZ
FL3	EH-368948J1	FILTER CE TPS5.5MW 5.5000MHZ
FL4	EH-394874J	FILTER CE SAF38.9MZA70Z
FL5	EH-428166J	FILTER CE SAF33.0MCD70Z
FL7	EH-373921J1	FILTER CE SFE6.0MB
IC1	EI-427370J	IC LA7577
L1	EO-410099J	COIL FIX 1 SPT0203SA T26 470J
L21	EO-410256J	COIL FIX 1 EL0405RA T05 100J
L22	EO-428462J	COIL FIX 1 EL0405RA T05 6R8J
L23	EO-428123J	COIL FIX 1 EL0405RA T05 5R6J
L51	EO-388160J	COIL FIX 1 EL0405SKI 1R8K
L61	EO-427255J	COIL FIX 1 EL0405RA T05 1R0J
TR1	ET-353899	TR 2SA1317 S,T,U
TR2	ET-421941J	TR UN4213 T05
TR5	ET-421952J	TR UN421L T05
TR6	ET-421938J	TR UN411L T05
TR7	ET-421941J	TR UN4213 T05
TR8	ET-397160J	TR 2SC3330 R,S,T,U,V
TR9	ET-353899	TR 2SA1317 S,T,U
TR10	ET-375777	TR 2SC2926S P,Q
TR11	ET-375777	TR 2SC2926S P,Q
TR14	ET-397160J	TR 2SC3330 R,S,T,U,V
TR91	ET-421941J	TR UN4213 T05
TR92	ET-353899	TR 2SA1317 S,T,U
VL1	EO-427367J	COIL TUN 1 V1203-075 VC0
VL2	EO-427368J	COIL TUN 1 V1203-076 AFT
VL3	EO-428167J	COIL TUN 1 V1203-045
VL91	EO-427369J	COIL TUN 1 V1203-077 6.0
VR1	EV-427374J	R S-FIX V T05EVNDCAA03 0.1W203

12. IN/OUT P.C. BOARD

Ref. No.	Part No.	Description
IC1-A	EI-428143J	IC MM1115XS [X480]
IC1-B	EI-425359J	IC MM1117XS [X800,X1000]
L1	EO-376600	COIL FIX 1 LF-5.0S F05 101K
L2	EO-376600	COIL FIX 1 LF-5.0S F05 101K
P3	EJ-428177J	SOCKET HLEM11R-1 11P [EGN TO IN/OUT]
PJ1	EJ-422552J	PIN J JPJ2202-01-040 1P
PJ2-A	EJ-428144J	PIN J JPJ2202-01-010 1P [X480]
PJ2-B	EJ-422553J	PIN J JPJ2202-01-030 1P [X800,X1000]
PJ3-A	EJ-428144J	PIN J JPJ2202-01-010 1P [X480]
PJ3-B	EJ-422554J	PIN J JPJ2202-01-020 1P [X800,X1000]
PJ4-A	EJ-422552J	PIN J JPJ2202-01-040 1P [X480]
PJ4-B	EJ-422553J	PIN J JPJ2202-01-030 1P [X800,X1000]
PJ5	EJ-422554J	PIN J JPJ2202-01-020 1P [X800,X1000]
PJ6	EJ-422552J	PIN J JPJ2202-01-040 1P [X800,X1000]
TR1	ET-397160J	TR 2SC3330 R,S,T,U,V
TR2-A	ET-397160J	TR 2SC3330 R,S,T,U,V [X480]
TR2-B	ET-366413	TR FET 2SJ105 GR [X800,X1000]
TR3-A	ET-397160J	TR 2SC3330 R,S,T,U,V [X480]
TR3-B	ET-366413	TR FET 2SJ105 GR [X800,X1000]
TR4	ET-397160J	TR 2SC3330 R,S,T,U,V [X800,X1000]
TR6	ET-353899	TR 2SA1317 S,T,U [X480]
TR7	ET-353899	TR 2SA1317 S,T,U [X800,X1000]

13. PRE-AMP P.C. BOARD (X480EGN)

Ref. No.	Part No.	Description
D1	ED-307572	D SILICON H 1SS131
D2	ED-307572	D SILICON H 1SS131
D3	ED-307572	D SILICON H 1SS131
IC1	EI-416607J	IC AN3386NK-A
IC101	EI-414861J	IC LA7285
L1	EO-345881	COIL FIX 1 EL0606SKI 101J
L101	EO-390717J	COIL FIX 1 LHL06TB T05 103J
P1	EJ-422093J	SOCKET HLEM9R-1 9P [MAIN TO PRE]
P2	EJ-418748J	SOCKET HLEM19R-1 19P [MAIN TO PRE]
P3	EJ-422094J1	SOCKET TKC-F06X-E1 6P [HEAD BLOCK TO PRE]
P4	EJ-422094J1	SOCKET TKC-F06X-E1 6P [HEAD BLOCK TO PRE]
TH30	EX-405691J	THERMISTOR NTH5D332KA
TR1	ET-421941J	TR UN4213 T05
TR2	ET-421941J	TR UN4213 T05
TR30	ET-397160J	TR 2SC3330 R,S,T,U,V
TR161	ET-422031J	TR UN4210 R,S T05
VR1	EV-403968J	R S-FIX V T05EVNDCAA03 0.1W473

14. PRE AMP & HI-FI P.C. BOARD (X800, X1000EGN-N)

Ref. No.	Part No.	Description
D1	ED-307572	D SILICON H 1SS131
D2	ED-307572	D SILICON H 1SS131
D3	ED-307572	D SILICON H 1SS131
D4	ED-307572	D SILICON H 1SS131
D5	ED-386031J	D SILICON CHIP MA110-TW
D6	ED-307572	D SILICON H 1SS131
D7	ED-307572	D SILICON H 1SS131
D8	ED-307572	D SILICON H 1SS131
D10	ED-386031J	D SILICON CHIP MA110-TW
D106	ED-307572	D SILICON H 1SS131
D108	ED-307572	D SILICON H 1SS131
D109	ED-307572	D SILICON H 1SS131
D111	ED-419028J	D SILICON CHIP MA152WK TXT08E
IC1	EI-416607J	IC AN3386NK-A
IC101	EI-425194J	IC AN3963NFBPA
IC102	EI-425189J	IC AN3317K
IC103	EI-385995J	IC BA7755A
L1	EO-345881	COIL FIX 1 EL0606SKI 101J
L80	EO-376599	COIL FIX 1 LF-5.0S F05 100K [X1000]
L81	EO-410093J	COIL FIX 1 SPT0203SA T26 150J [X1000]
L101	EO-376611	COIL FIX 1 LF-5.0S F05 470K
L102	EO-376611	COIL FIX 1 LF-5.0S F05 470K
L103	EO-376611	COIL FIX 1 LF-5.0S F05 470K
L104	EO-392659J	COIL FIX 1 LHL06TB T05 562J
L107	EO-376611	COIL FIX 1 LF-5.0S F05 470K
L108	EO-400782J	COIL FIX 1 EL0606RA T05 222J
L109	EO-400782J	COIL FIX 1 EL0606RA T05 222J
L110	EO-376611	COIL FIX 1 LF-5.0S F05 470K
P1	EJ-422093J	SOCKET HLEM9R-1 9P [MAIN TO PRE]
P3	EJ-422569J1	SOCKET TKC-F12X-E1 12P [HEAD BLOCK TO PRE]
P101	EJ-418748J	SOCKET HLEM19R-1 19P [MAIN TO PRE]
P102	EJ-422563J	SOCKET HLEM16R-1 16P [MAIN TO PRE]
P129	EJ-422094J1	SOCKET TKC-F06X-E1 6P [HEAD BLOCK TO PRE]
TH30	EX-405691J	THERMISTOR NTH5D332KA
TR1	ET-421941J	TR UN4213 T05
TR2	ET-421941J	TR UN4213 T05
TR3	ET-421941J	TR UN4213 T05
TR4	ET-421941J	TR UN4213 T05
TR5	ET-421941J	TR UN4213 T05
TR6	ET-397160J	TR 2SC3330 R,S,T,U,V
TR30	ET-397160J	TR 2SC3330 R,S,T,U,V
TR80	ET-416932J	TR C.2SB709A R,S TXT08E [X1000]
TR81	ET-416932J	TR C.2SB709A R,S TXT08E [X1000]
TR101	ET-421993J	TR C.UN2215 R,S TXT08E
TR102	ET-414836J	TR C.UN2213 TXT08E
TR103	ET-421977J	TR C.UN2113 TXT08E
TR104	ET-421993J	TR C.UN2215 R,S TXT08E
TR105	ET-421993J	TR C.UN2215 R,S TXT08E
TR106	ET-416933J	TR C.2SD601A R,S TXT08E
TR108	ET-414836J	TR C.UN2213 TXT08E
TR112	ET-421990J	TR C.UN2211 TXT08E
TR113	ET-421993J	TR C.UN2215 R,S TXT08E
TR114	ET-421993J	TR C.UN2215 R,S TXT08E
TR115	ET-416932J	TR C.2SB709A R,S TXT08E
TR118	ET-416932J	TR C.2SB709A R,S TXT08E
TR119	ET-416932J	TR C.2SB709A R,S TXT08E
TR120	ET-421993J	TR C.UN2215 R,S TXT08E
TR121	ET-416933J	TR C.2SD601A R,S TXT08E
TR122	ET-427131J	TR C.DTA115TK
TR140	ET-421993J	TR C.UN2215 R,S TXT08E
TR141	ET-421993J	TR C.UN2215 R,S TXT08E
TR142	ET-421973J	TR C.UN2110 R,S TXT08E
TR143	ET-421989J	TR C.UN2210 R,S TXT08E
TR144	ET-414836J	TR C.UN2213 TXT08E
TR145	ET-414836J	TR C.UN2213 TXT08E
VR1	EV-408710J	R S-FIX V T05EVNDCAA03 0.1W472
VR101	EV-389476J	R S-FIX H T05EVNDXAA03 0.1W103
VR102	EV-389489J	R S-FIX H T05EVNDXAA03 0.1W472
VR103	EV-396024J	R S-FIX H T05EVNDXAA03 0.1W474
VR104	EV-396024J	R S-FIX H T05EVNDXAA03 0.1W474

15. OPERATION P.C. BOARD (X480EGN)

Ref. No.	Part No.	Description
FL101	EM-428145J	IND FL FV662G CHARACTER
PH101	ET-425638J	DETECTOR SBX1815-R2 [REMOCON DETECTOR]
P116	EJ-426203J	SOCKET TRC-X22X-A2 22P [MAIN TO OP]
P117	EJ-426204J	SOCKET TRC-X14X-A2 14P [MAIN TO OP]
SW101	ES-408404J	SW TACT EVQ 235 07K T05
SW102	ES-411687J	SW TACT EVQ-PAE05R
SW103	ES-411687J	SW TACT EVQ-PAE05R
SW104	ES-411687J	SW TACT EVQ-PAE05R
SW105	ES-411687J	SW TACT EVQ-PAE05R
SW106	ES-411687J	SW TACT EVQ-PAE05R
SW107	ES-411687J	SW TACT EVQ-PAE05R
SW108	ES-411687J	SW TACT EVQ-PAE05R
SW109	ES-396610J	SW TACT SOR-122HS T05
SW110	ES-411687J	SW TACT EVQ-PAE05R
SW111	ES-411687J	SW TACT EVQ-PAE05R
SW112	ES-396610J	SW TACT SOR-122HS T05

16. FRONT P.C. BOARD (X480EGN)

Ref. No.	Part No.	Description
J821	EJ-422355J	PIN J JPJ4022-01-010 1P
J822	EJ-422356J	PIN J JPJ4022-01-040 1P
TR822	ET-397160J	TR 2SC3330 R,S,T,U,V
TR823	ET-397160J	TR 2SC3330 R,S,T,U,V

17. OPERATION P.C. BOARD (X800EGN-N)

Ref. No.	Part No.	Description
FL1	EM-428147J1	IND FL FV663G CHARACTER
P16	EJ-426204J	SOCKET TRC-X14X-A2 14P [MAIN TO OP]
P17	EJ-426203J	SOCKET TRC-X22X-A2 22P [MAIN TO OP]
PH1	ET-425638J	DETECTOR SBX1815-R2 [REMOCON DETECTOR]
SW1	ES-425239J	SW TACT EVQ PBE 07K
SW2	ES-411687J	SW TACT EVQ-PAE05R
SW3	ES-411687J	SW TACT EVQ-PAE05R
SW4	ES-411687J	SW TACT EVQ-PAE05R
SW5	ES-411687J	SW TACT EVQ-PAE05R
SW6	ES-411687J	SW TACT EVQ-PAE05R
SW7	ES-411687J	SW TACT EVQ-PAE05R
SW8	ES-411687J	SW TACT EVQ-PAE05R
SW9	ES-411687J	SW TACT EVQ-PAE05R
SW10	ES-411687J	SW TACT EVQ-PAE05R
SW11	ES-411687J	SW TACT EVQ-PAE05R
SW12	ES-411687J	SW TACT EVQ-PAE05R

18. FRONT P.C. BOARD (X800EGN-N)

Ref. No.	Part No.	Description
D801	ED-307572	D SILICON H 1SS131
D802	ED-307572	D SILICON H 1SS131
PJ801	EJ-418819J	PIN J JPJ4025-01-040 1P
PJ802	EJ-422545J	PIN J JPJ5025-010030 1P
PJ803	EJ-422546J	PIN J JPJ5025-010020 1P
TR801	ET-397160J	TR 2SC3330 R,S,T,U,V
TR802	ET-397160J	TR 2SC3330 R,S,T,U,V
TR803	ET-397160J	TR 2SC3330 R,S,T,U,V

19. OPERATION (A) P.C. BOARD (X1000)

Ref. No.	Part No.	Description
C23	EC-425398J	C DOUBLE FYD0H473Z 5.5DC
D1	ED-404221J	D ZENER H MTZJ6.2B T26
D2	ED-307572	D SILICON H 1SS131
D3	ED-307572	D SILICON H 1SS131
D4	ED-397233J	D ZENER H HZS5C3
D5	ED-307572	D SILICON H 1SS131
D6	ED-307572	D SILICON H 1SS131
D9	ED-307572	D SILICON H 1SS131
D10	ED-418722J	D ZENER H MTZJ4.3A T26
D11	ED-425712J	D ZENER H MTZJ18B T26
FL1	EO-418856J	COIL OSC 1 6067A 70.0KHZ
FL2	EO-425267J	COIL OSC 1125-8086-31 62.5KHZ
FR2	⚠ ER-307565	R FUSE H S10 ERD2FC 1/4W 6R8J
FR3	⚠ ER-425269J	R FUSE H S10 RF25SC 1/4W R47K
IB1	EH-383057J	COMP R RGLE5X 473J
IB2	EH-378541J	COMP R RGLE3X 473J
IB3	EH-378541J	COMP R RGLE3X 473J
IB4	EH-383083J	COMP R RGLE3X 103J
IB5	EH-429919J	COMP R RGLE5X 152J
IB6	EH-425932J	COMP R RGLE10X 473J
IB7	EH-383099J	COMP R RGLE4X 472J
IC1	EI-428244J	IC M38173M6-297FP GXEGOP1
IC2	EI-416691J	IC XC61AC3002TH T05
IC3	EI-364896	IC BA6138
IC4	EI-403233J	IC LB1641
L1	EO-390716J	COIL FIX 1 LHL06TB T05 272J
L2	EO-410256J	COIL FIX 1 EL0405RA T05 100J
L3	EO-410256J	COIL FIX 1 EL0405RA T05 100J
P18	EJ-397357J	SOCKET HLEM13R-1 13P [MAIN TO OP]
P47	EJ-425296J	SOCKET HLEM6R-1 6P [OP[A] TO OP[B]]
P49	EJ-416651J	SOCKET 00 6216 016 100 16P [OP TO FLD]
P50	EJ-416651J	SOCKET 00 6216 016 100 16P [OP TO FLD]
TR1	ET-397160J	TR 2SC3330 R,S,T,U,V
TR2	ET-397160J	TR 2SC3330 R,S,T,U,V
TR3	ET-421943J	TR UN4214 T05
TR4	ET-353899	TR 2SA1317 S,T,U
TR5	ET-425262J	TR 2SD1758 Q,R (CPT F5)
TR6	ET-421941J	TR UN4213 T05
TR7	ET-353899	TR 2SA1317 S,T,U
TR8	ET-422254J	TR UN4117 R,S T05
TR9	ET-415140J	TR DTA115TS T05
TR10	ET-422031J	TR UN4210 R,S T05
TR16	ET-353899	TR 2SA1317 S,T,U
X1	EI-368825M	OSC X'TAL C-002RX 32.768KHZ
X2	EI-405327J	OSC CE CST6.00MGW 6.000MHZ

20. OPERATION (B) P.C. BOARD (X1000EGN-N)

Ref. No.	Part No.	Description
P247	EJ-425296J	SOCKET HLEM6R-1 6P [OP[A] TO OP[B]]
SW202	ES-411687J	SW TACT EVQ-PAE05R
SW203	ES-411687J	SW TACT EVQ-PAE05R
SW208	ES-411687J	SW TACT EVQ-PAE05R
SW209	ES-411687J	SW TACT EVQ-PAE05R
SW210	ES-411687J	SW TACT EVQ-PAE05R
SW216	ES-411687J	SW TACT EVQ-PAE05R
SW220	ES-411687J	SW TACT EVQ-PAE05R
SW221	ES-411687J	SW TACT EVQ-PAE05R
SW301	ES-411687J	SW TACT EVQ-PAE05R
SW304	ES-411687J	SW TACT EVQ-PAE05R
SW307	ES-411687J	SW TACT EVQ-PAE05R
SW313	ES-411687J	SW TACT EVQ-PAE05R
SW314	ES-411687J	SW TACT EVQ-PAE05R
SW315	ES-411687J	SW TACT EVQ-PAE05R
SW318	ES-411687J	SW TACT EVQ-PAE05R
SW319	ES-411687J	SW TACT EVQ-PAE05R
SW323	ES-427201J	SW TACT SKHHDT

21. FRONT P.C. BOARD (X1000EGN-N)

Ref. No.	Part No.	Description
D1	ED-307572	D SILICON H 1SS131
D2	ED-425270J	D LED GL5ED44 RED,GREEN
D3	ED-307572	D SILICON H 1SS131
D4	ED-418996J	D ZENER H MTZJ3.0A T26
D21	ED-307572	D SILICON H 1SS131
D22	ED-307572	D SILICON H 1SS131
D23	ED-307572	D SILICON H 1SS131
D24	ED-307572	D SILICON H 1SS131
IC1	EI-386468J	IC BA3308
L1	EO-376600	COIL FIX 1 LF-5.0S F05 101K
PJ1	EJ-410383J	PHONE J 2P HSJ1406-01-010 3.5
PJ2	EJ-362033	PHONE J 3P HSJ1406 3.5
PJ21	EJ-425271J	PIN J JPJ1088-010040 1P
PJ22	EJ-425273J	PIN J JPJ1088-010030 1P
PJ23	EJ-425274J	PIN J JPJ1088-010020 1P
TR1	ET-421945J	TR UN4216 R,S T05
TR2	ET-421945J	TR UN4216 R,S T05
TR21	ET-397160J	TR 2SC3330 R,S,T,U,V
TR22	ET-397160J	TR 2SC3330 R,S,T,U,V
TR23	ET-397160J	TR 2SC3330 R,S,T,U,V
VR1	EV-418870J	VR ROTARY RK09K1130L25 B203 FL
VR2	EV-427943J	VR ROTARY RK09K1130L20 C203 FL

22. REMOCON P.C. BOARD (X1000EGN-N)

Ref. No.	Part No.	Description
PH101	ET-425627J	DETECTOR SBX1790-R2 [REMOCON DETECTOR]

23. POWER (A) P.C. BOARD

Ref. No.	Part No.	Description
C1	⚠ EC-422101J	C MMY V CUT MKTR40 104M 275AC
C2	⚠ EC-422101J	C MMY V CUT MKTR40 104M 275AC
C3	⚠ EC-418706J	C CE V CUT CS11 E222M 400AC
C4	⚠ EC-418706J	C CE V CUT CS11 E222M 400AC
C5	⚠ EC-418706J	C CE V CUT CS11 E222M 400AC
C6	⚠ EC-418706J	C CE V CUT CS11 E222M 400AC
C7	⚠ EC-418706J	C CE V CUT CS11 E222M 400AC
C8	⚠ EC-418706J	C CE V CUT CS11 E222M 400AC
C9	⚠ EC-418706J	C CE V CUT CS11 E222M 400AC
C10	EC-428165J	C EC V CUT MXW18 101M 400DC
C12	⚠ EC-418760J	C CE V T05 FK22 Y5R103K 500DC
C13	EC-418759J	C CE V T05 CC45 SL121K1000DC
C21	EC-426195J	C EC V CUT YXB12 332M 6.3DC
C22	EC-404196J	C EC V SXE12 102M 35.0DC
D1	⚠ ED-422125J	D SILICON 1N4006 T26 800/1.0A
D2	⚠ ED-422125J	D SILICON 1N4006 T26 800/1.0A
D3	⚠ ED-422125J	D SILICON 1N4006 T26 800/1.0A
D4	⚠ ED-422125J	D SILICON 1N4006 T26 800/1.0A
D5	ED-418976J	D SILICON EG01CW T05 1000/0.5A
D10	⚠ ED-307572	D SILICON H 1SS131
D11	ED-307572	D SILICON H 1SS131
D12	⚠ ED-307572	D SILICON H 1SS131
D13	⚠ ED-428162J	D SCHOTTKY 1S30-E T26 [X480,X800]
D14	⚠ ED-425207J	D SILICON ERA18-02 T26
D15	⚠ ED-422244J	D SCHOTTKY RK34LF-B2 S12
D16	⚠ ED-422462J	D SCHOTTKY RK49 015-302 S15
D17	⚠ ED-425207J	D SILICON ERA18-02 T26
F1	⚠ EF-427351J	FUSE 215 T 250V 2.50A
FR3	⚠ ER-400728J	R FUSE V T05 RF25SCVTP1/4WR12K
IC1	⚠ EI-422128J	IC TA76431S T05
L1	⚠ EO-428158J	COIL LF HR-28A-333
P2	⚠ EJ-416590J1	SOCKET INLET CCT-2302-0371 2P
PH1	⚠ ET-422113J	PHOTO COUPLER PS2561-1-V
R1	⚠ ER-418739J	R CT P RGG3 3W 4R7K
R2	⚠ ER-422181J	R OMF H S20 FS ERG3SH 3W 823J
R3	⚠ ER-422186J	R OMF H S15 FS PR02 2W 151J
R4	⚠ ER-418808J	R OMF H S15 FS RSSX 2W R68J
R16	⚠ ER-386215J	R OMF H S12 FS 1W 220J
R21	⚠ ER-318316	R MF H F10 1/4W 2201F
R22	⚠ ER-314600	R MF H 1/4W 1601F
T1	⚠ BT-428159J	TRANS POW V1203EGN
TR1	⚠ ET-428170J	TR FET 2SK2056
TR2	⚠ ET-422129J	TR 2SD2132 U,V T05
TR7	ET-422129J	TR 2SD2132 U,V T05

24. POWER (B) P.C BOARD

Ref. No.	Part No.	Description
D20	ED-387783J	D ZENER H HZS6C3L
D21	ED-387783J	D ZENER H HZS6C3L
D22	ED-387783J	D ZENER H HZS6C3L
D24	ED-391005J	D ZENER H HZS12B1
D25	ED-307572	D SILICON H 1SS131
D31	ED-427412J	D ZENER H HZS24-3 T26
D32	ED-427412J	D ZENER H HZS24-3 T26
FR1	⚠ ER-400728J	R FUSE V T05 RF25SCVTP1/4WR12K
FR2	⚠ ER-400728J	R FUSE V T05 RF25SCVTP1/4WR12K
IC2	⚠ EI-416778J	IC NJM4558LA
L2	EO-422134J	COIL FIX 2 PC7-330K 330K
L3	EO-422134J	COIL FIX 2 PC7-330K 330K
L4	EO-422134J	COIL FIX 2 PC7-330K 330K
TH1	⚠ EX-412521J	THERMISTOR 911P83E101NH07 T05
TR3	⚠ ET-416588J	TR 2SD2166 Q,R,S
TR4	⚠ ET-422511J	TR 2SD2375 P
TR5	ET-404498J	TR 2SB1306 Q,R T05
TR6	ET-397160J	TR 2SC3330 R,S,T,U,V

25. EGN P.C. BOARD

Ref. No.	Part No.	Description
D1	ED-397614J	D ZENER H HZS9A3L T26 [X1000]
D2	ED-307572	D SILICON H 1SS131 [X1000]
D3	ED-307572	D SILICON H 1SS131 [X1000]
D4	ED-307572	D SILICON H 1SS131
DL1	EH-428188J	DL CF752S(4PIN-NTSC)
DL2	EH-419079J	DL CF706(4PIN-NTSC)
DL3	EH-416491J	DL EFDJLA13A [X480,X800]
DL4	EH-422240J	DL ADL-SN2344Q [X1000]
IC1	EI-422218J	IC M51494L [X1000]
IC2	EI-400756J	IC NJM4558L-B [X1000]
IC3	EI-428189J	IC MM1116XS
IC4	EI-428137J	IC TL8828P
IC5	EI-428000J	IC LC74761-9076
L2	EO-410093J	COIL FIX 1 SPT0203SA T26 150J
L3	EO-410093J	COIL FIX 1 SPT0203SA T26 150J [X480,X800]
L4	EO-410093J	COIL FIX 1 SPT0203SA T26 150J
L5	EO-410093J	COIL FIX 1 SPT0203SA T26 150J
L6	EO-403270J	COIL FIX 1 EL0405RA T05 101J
L7	EO-410091J	COIL FIX 1 SPT0203SA T26 100J [X1000]
L8	EO-403270J	COIL FIX 1 EL0405RA T05 101J [X1000]
L9	EO-414616J	COIL FIX 1 LAP02TA T26 270J [X1000]
L10	EO-403270J	COIL FIX 1 EL0405RA T05 101J
L11	EO-403270J	COIL FIX 1 EL0405RA T05 101J
L12	EO-410097J	COIL FIX 1 SPT0203SA T26 330J
L13	EO-410098J	COIL FIX 1 SPT0203SA T26 390J
L14	EO-403270J	COIL FIX 1 EL0405RA T05 101J
L15	EO-410090J	COIL FIX 1 SPT0203SA T26 8R2J
L16	EO-410256J	COIL FIX 1 EL0405RA T05 100J
L17	EO-345869	COIL FIX 1 EL0606SKI 150J
L18	EO-410101J	COIL FIX 1 SPT0203SA T26 680J
L21	EO-410255J	COIL FIX 1 EL0405RA T05 470J
L22	EO-410091J	COIL FIX 1 SPT0203SA T26 100J
P4	EJ-416549J	SOCKET HLEM11S-1 11P [EGN TO IN/OUT]
TH1	EX-405691J	THERMISTOR NTH5D332KA
TR1	ET-421941J	TR UN4213 T05
TR2	ET-353899	TR 2SA1317 S,T,U
TR3	ET-421941J	TR UN4213 T05
TR4	ET-397160J	TR 2SC3330 R,S,T,U,V
TR5	ET-421941J	TR UN4213 T05
TR6	ET-397160J	TR 2SC3330 R,S,T,U,V
TR7	ET-421941J	TR UN4213 T05
TR8	ET-397160J	TR 2SC3330 R,S,T,U,V
TR9	ET-397160J	TR 2SC3330 R,S,T,U,V [X1000]
TR10	ET-397160J	TR 2SC3330 R,S,T,U,V [X1000]
TR11	ET-397160J	TR 2SC3330 R,S,T,U,V [X1000]
TR12	ET-397160J	TR 2SC3330 R,S,T,U,V [X1000]
TR13	ET-397160J	TR 2SC3330 R,S,T,U,V [X1000]
TR14	ET-353899	TR 2SA1317 S,T,U [X1000]
TR15	ET-397160J	TR 2SC3330 R,S,T,U,V [X1000]
TR16	ET-397160J	TR 2SC3330 R,S,T,U,V [X1000]
TR17	ET-397160J	TR 2SC3330 R,S,T,U,V [X1000]
TR18	ET-397160J	TR 2SC3330 R,S,T,U,V [X1000]
TR19	ET-397160J	TR 2SC3330 R,S,T,U,V [X1000]

Ref. No.	Part No.	Description
TR20	ET-353899	TR 2SA1317 S,T,U [X1000]
TR21	ET-397160J	TR 2SC3330 R,S,T,U,V [X1000]
TR22	ET-353899	TR 2SA1317 S,T,U
TR31	ET-397160J	TR 2SC3330 R,S,T,U,V
TR32	ET-421941J	TR UN4213 T05
TR33	ET-397160J	TR 2SC3330 R,S,T,U,V
TR34	ET-353899	TR 2SA1317 S,T,U
TR35	ET-397160J	TR 2SC3330 R,S,T,U,V
TR36	ET-353899	TR 2SA1317 S,T,U
TR38	ET-397160J	TR 2SC3330 R,S,T,U,V
TR39	ET-397160J	TR 2SC3330 R,S,T,U,V
TR41	ET-353899	TR 2SA1317 S,T,U
TR42	ET-353899	TR 2SA1317 S,T,U
TR43	ET-397160J	TR 2SC3330 R,S,T,U,V
TR44	ET-353899	TR 2SA1317 S,T,U
TR45	ET-397160J	TR 2SC3330 R,S,T,U,V
TR46	ET-353899	TR 2SA1317 S,T,U
VL1	EO-422362J	COIL TUN 1 V1184-049B VCO
VR1	EV-416720J	R S-FIX H T05EVNDXAA03 0.1W471 [X1000]
VR2	EV-416720J	R S-FIX H T05EVNDXAA03 0.1W471 [X1000]
VR3	EV-405248J	R S-FIX V T05EVNDCAA03 0.1W471
VR4	EV-440239J	R S-FIX V T05EVNDCAA03 0.1W222
X1	EI-428190J	OSC X'TAL APS1014 13.571MHZ
X2	EI-410263J	OSC X'TAL HC-49/U 14.318180MHZ
X3	EI-416872J	OSC X'TAL APS1004A 17.734475MH

26. SECAM P.C. BOARD (X480EGN)

Ref. No.	Part No.	Description
FL201	EH-418756J	FILTER LC BP TZV-3ZL 4.3MHZ
FL202	EH-422440J	FILTER LC BP TZV-3ZE 2.2MHZ
FL203	EH-425229J	FILTER LC BP TZV-3ZM 1.0MHZ
IC201	EI-422443J	IC M51646SP
L201	EO-418521J	COIL FIX 1 LAP02TA T26 121J
L202	EO-410099J	COIL FIX 1 SPT0203SA T26 470J
L203	EO-425422J	COIL FIX 1 EL0405RA T05 391J
TR201	ET-421941J	TR UN4213 T05
TR202	ET-397160J	TR 2SC3330 R,S,T,U,V
TR203	ET-397160J	TR 2SC3330 R,S,T,U,V
TR204	ET-421944J	TR UN4215 R,S T05
TR206	ET-397160J	TR 2SC3330 R,S,T,U,V
VL201	EO-422435J	COIL VARI 1 V1185-058A 4.28MH
VL202	EO-418758J	COIL VARI 1 V1185-057B 1.07MH

27. D-NICAM P.C. BOARD (X800, X1000EGN-N)

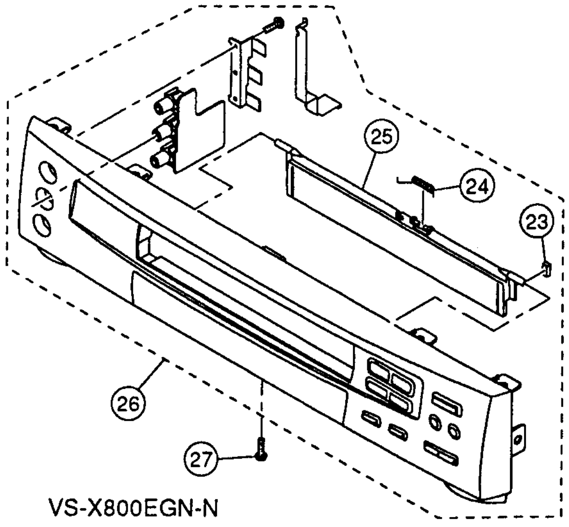
Ref. No.	Part No.	Description
FL1	EH-397511J	FILTER LC BP TH316BQKS-2982QDD
FL82	EH-382829J	FILTER LC BP TH316BQM-2110QDAF
IC1	EI-425190J	IC TDA8204
IC2	EI-425191J	IC TDA8205
L1	EO-381189J	COIL FIX 1 EL0405SKI 100K
L2	EO-345881	COIL FIX 1 EL0606SKI 101J
L3	EO-381189J	COIL FIX 1 EL0405SKI 100K
L4	EO-381189J	COIL FIX 1 EL0405SKI 100K
L5	EO-381189J	COIL FIX 1 EL0405SKI 100K
L6	EO-381189J	COIL FIX 1 EL0405SKI 100K
TR1	ET-397160J	TR 2SC3330 R,S,T,U,V
TR2	ET-397160J	TR 2SC3330 R,S,T,U,V
TR3	ET-421941J	TR UN4213 T05
TR4	ET-422031J	TR UN4210 R,S T05
TR5	ET-397160J	TR 2SC3330 R,S,T,U,V
TR6	ET-397160J	TR 2SC3330 R,S,T,U,V
TR81	ET-397160J	TR 2SC3330 R,S,T,U,V
TR82	ET-397160J	TR 2SC3330 R,S,T,U,V
X1	EI-425184J	OSC X'TAL APS-1007 11.648MHZ

28. FINAL ASSEMBLY BLOCK (X480EGN,X800EGN-N)

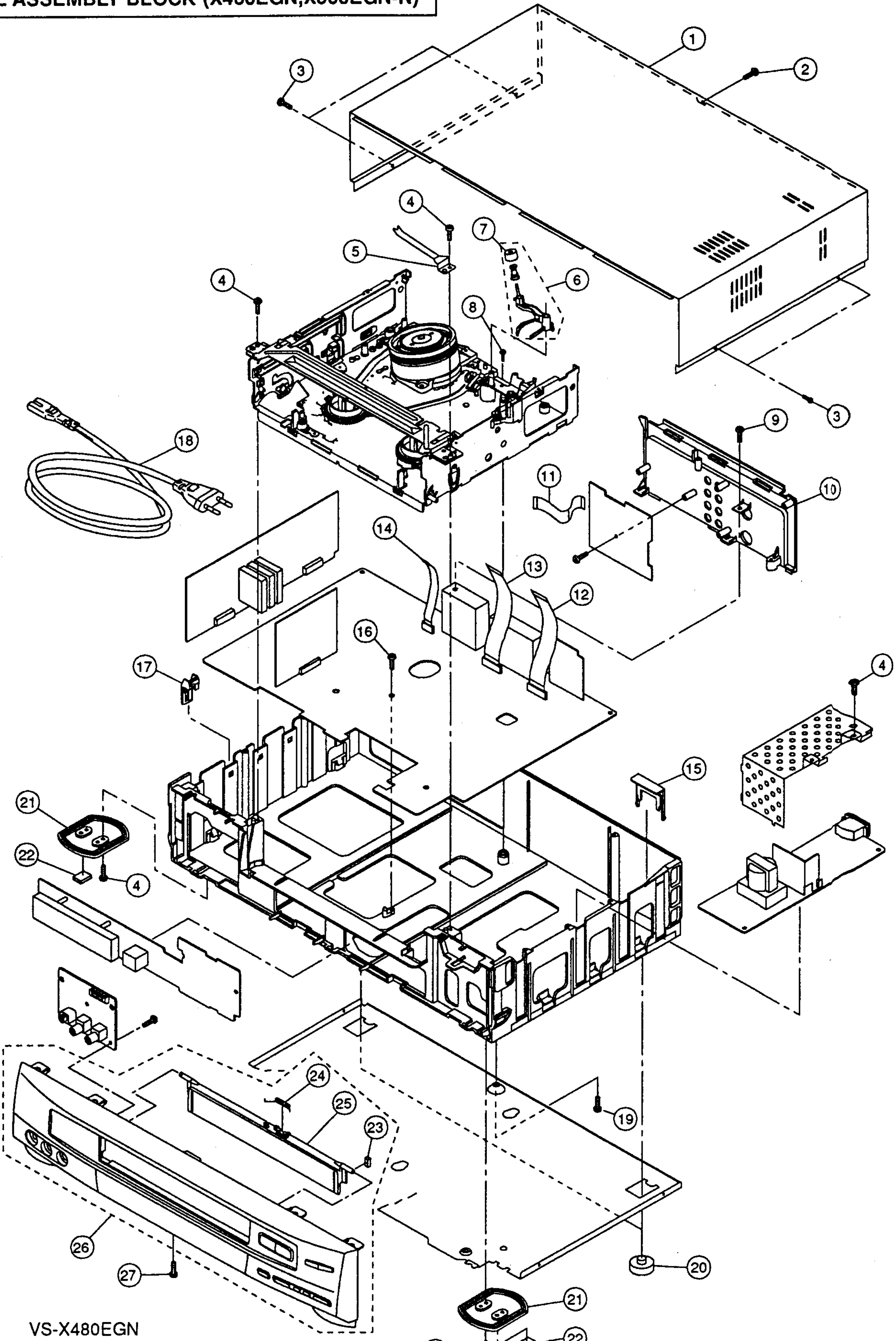
Ref. No.	Part No.	Description
1	SP-426886J	COVER UPPER AX(2)
2	ZS-427134J	PT BID30X10STL BZN EARTH LOCK
3	ZS-385611J	DT BID26X06STL BNI
4	ZS-362378	PLX BID30X10STL CMT
5	MZ-420496N1	EARTH MECHA (SG)
6	HZ-V1182A200A	HEAD CLEANER BLK G204ES
7	HZ-417681J	ROLLER HEAD CLEANER(2)
8	ZS-407886J	BT PAN30X08STL BZN C100
9	ZS-323728	BID30X05STL CMT
10-A	SP-428486N1	PANEL REAR JACK X480EGN (SG) [X480]
10-B	SP-428479N	PANEL REAR JACK X800EGN (SG) [X800]
11	EW-428131J	CORD FFC BD P1.25 L50 11P [EGN TO IN/OUT]
12	EW-427457J	CORD FFC BD P1.25 L160 16P [MAIN TO PRE][X800]
13	EW-421820J	CORD FFC BD P1.25 L=100 19P [MAIN TO PRE]
14	EW-421819J	CORD FFC BD P1.25 L=90 9P [MAIN TO PRE]
15	SZ-420495N	COVER INLET (SG)
16	ZS-383379J	PLX BID30X08STL CMT
17	SZ-420493N	HOLDER PC(1) (SG)
18	⚠ EW-412522J	AC CORD200S KP419CKS15F B V
19	ZS-378341	PLX BID30X12STL CMT
20	SA-426837J	FOOT AX4
21	SA-426841J	FOOT AX2
22	SA-420497J	FOOT AX
23	SZ-407193J	CUSHION MASK(2)
24	ZG-416251M	SP MASK(3) (SG)
25-A	SE-426902N2	MASK CASSETTE VS-X480(E) (SG)
25-B	SE-426910J3	MASK CASSETTE VS-X800(E)
26-A	BD-426900N4	PANEL F(E)X480EGN PART (SG)
26-B	BD-426904J4	PANEL F(F)X800EGN PART
27	ZS-391046J	PLX BID26X10STL BNI

NOTE :

Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.



FINAL ASSEMBLY BLOCK (X480EGN,X800EGN-N)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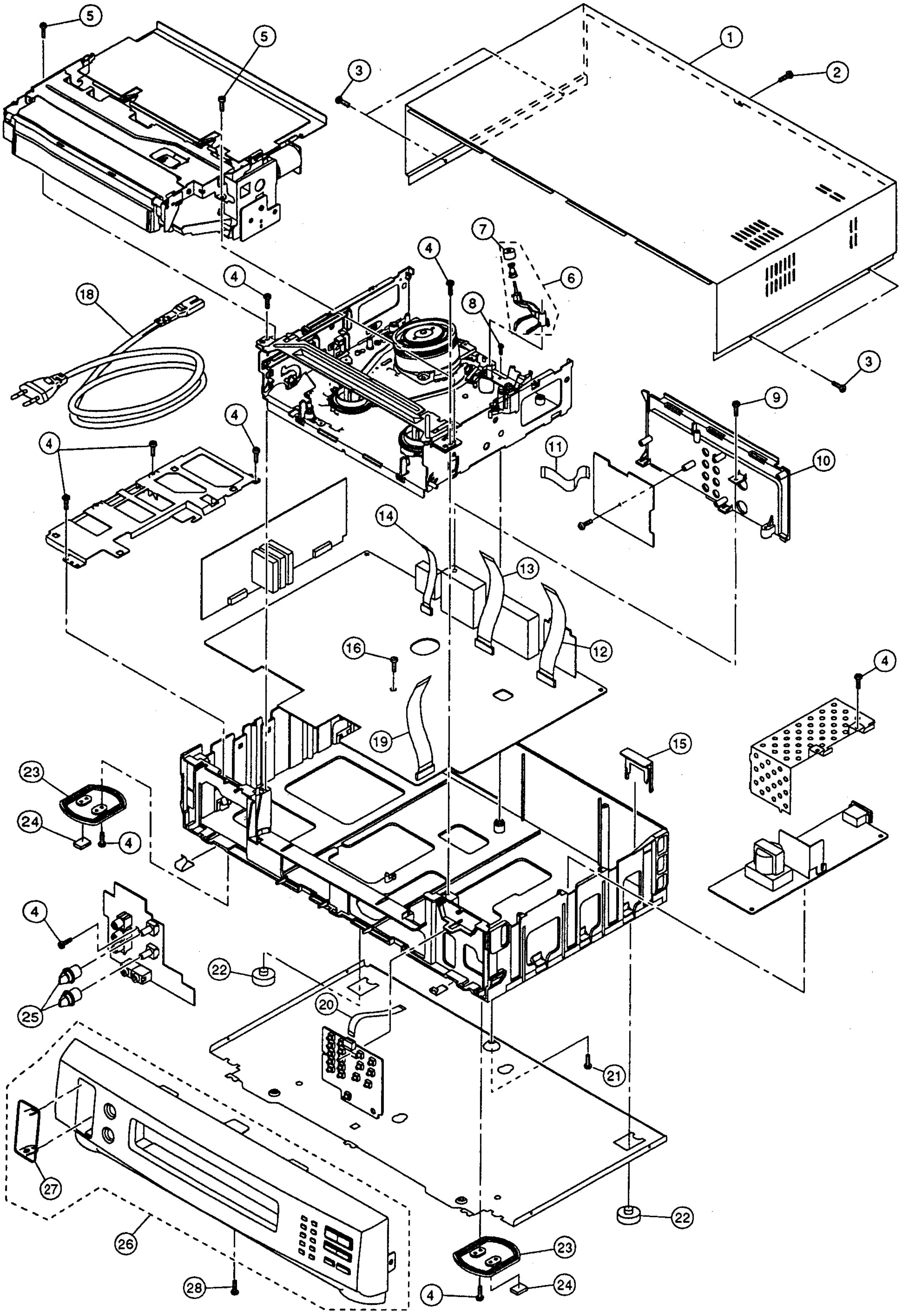
FINAL ASSEMBLY BLOCK (X1000EGN-N)



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29. FINAL ASSEMBLY BLOCK (X1000EGN-N)

Ref. No.	Part No.	Description
1	SP-424650J	COVER UPPER AIX
2	ZS-427134J	PT BID30X10STL BZN EARTH LOCK
3	ZS-385611J	DT BID26X06STL BNI
4	ZS-362378	PLX BID30X10STL CMT
5	ZS-358936	ST BID30X06STL CMT
6	HZ-V1182A200A	HEAD CLEANER BLK G204ES
7	HZ-417681J	ROLLER HEAD CLEANER(2)
8	ZS-407886J	BT PAN30X08STL BZN C100
9	ZS-323728	BID30X05STL CMT
10	SP-428479N	PANEL REAR JACK X800EGN (SG)
11	EW-428131J	CORD FFC BD P1.25 L50 11P [EGN TO IN/OUT]
12	EW-427457J	CORD FFC BD P1.25 L160 16P [MAIN TO PRE]
13	EW-421820J	CORD FFC BD P1.25 L=100 19P [MAIN TO PRE]
14	EW-421819J	CORD FFC BD P1.25 L=90 9P [MAIN TO PRE]
15	SZ-420495N	COVER INLET (SG)
16	ZS-383379J	PLX BID30X08STL CMT
18	⚠ EW-412522J	AC CORD200S KP419CKS15F B V
19	EW-425279J	CORD FFC BD P1.25 L250 13P [MAIN TO OP]
20	EW-425280J	CORD FFC BD P1.25 L200 6P [OP[A] TO OP[B]]
21	ZS-378341	PLX BID30X12STL CMT
22	SA-426837J	FOOT AX4
23	SA-427002J	FOOT AX3
24	SA-420497J	FOOT AX
25	SK-420358J	KNOB LEVEL
26	BD-427240J3	PANEL F(G)X1000EGN-N PART
27	SC-427244J	DOOR JACK(E)-G
28	ZS-391046J	PLX BID26X10STL BNI

NOTE :
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

30. ACCESSARY

Ref. No.	Part No.	Description
1	EW-348414	CORD PAL
2-A	AV-428146N	REMOCON RC-W159E [X480]
2-B	AV-428134J1	REMOCON RC-W689E [X800,X1000]
3	SC-733720J	COVER BATTERY (AX) [RC-W689]
4	SP-733758J	LID AX G-CODE-1 [RC-W689]

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Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.
AV428134J1	30-2-B	ED307572	7-D303	ED418722J	7-D503	EI385995J	14-IC103
AV428146N	30-2-A	ED307572	7-D304	ED418722J	19-D10	EI386468J	21-IC1
BAV1184A610G	6-2-A	ED307572	7-D308	ED418976J	23-D5	EI389622J	7-IC1
BAV1190A650D	6-6	ED307572	7-D309	ED418996J	21-D4	EI389644J	10-IC3
BAV1194A630A	6-3	ED307572	7-D340	ED419028J	14-D111	EI394868J	9-IC1
BAV1203A500A	6-4-A	ED307572	7-D341	ED422125J	23-D1	EI394870J	9-X1
BAV1203A500B	6-4-B	ED307572	7-D350	ED422125J	23-D2	EI400756J	25-IC2
BAV1203A600A	6-1-B	ED307572	7-D401	ED422125J	23-D3	EI401069J	7-X2
BAV1203A600B	6-1-A	ED307572	7-D403	ED422125J	23-D4	EI403233J	7-IC404
BAV1203A600C	6-1-C	ED307572	7-D501	ED422244J	23-D15	EI403233J	19-IC4
BAV1203A610A	6-2-B	ED307572	7-D502	ED422251J	7-D408	EI405327J	19-X2
BAV1203A610B	6-2-C	ED307572	7-D601	ED422462J	23-D16	EI410263J	25-X2
BAV1203A690B	6-7-A	ED307572	7-D602	ED425207J	23-D14	EI410451J	7-IC603
BAV1203A700A	6-7-B	ED307572	7-D603	ED425207J	23-D17	EI414861J	13-IC101
BAV1203A760A	6-5-A	ED307572	7-D610	ED425270J	21-D2	EI416607J	13-IC1
BAV1203A760B	6-5-B	ED307572	7-D672	ED425712J	19-D11	EI416607J	14-IC1
BB421845N46	3-59	ED307572	7-D681	ED427218J	7-D411	EI416691J	7-IC502
BD426900N4	28-26-A	ED307572	7-D682	ED427363J	7-D504	EI416691J	19-IC2
BD426904J4	28-26-B	ED307572	7-D691	ED427412J	24-D31	EI416778J	24-IC2
BD427240J3	29-26	ED307572	7-D692	ED427412J	24-D32	EI416872J	25-X3
BL420054N3	3-26	ED307572	10-D90	ED428162J	23-D13	EI416921J	9-IC2
BL424913N06	3-53	ED307572	13-D1	ED511907	7-D404	EI418149J	7-IC605
BM419269J	4-11	ED307572	13-D2	ED511907	7-D405	EI418150J	7-IC606
BM419324J1	2-9	ED307572	13-D3	ED511907	7-D406	EI422128J	23-IC1
BM421746N	4-6	ED307572	14-D1	ED511907	7-D407	EI422131J	7-IC201
BM424801J	5-21	ED307572	14-D2	EE428206J	7-TU1	EI422218J	25-IC1
BT428159J	23-T1	ED307572	14-D3	EF427351J	23-F1	EI422375J	7-IC604
BVV1182A410C	2-3-A	ED307572	14-D4	EH358973J1	7-FL6	EI422443J	26-IC201
BVV1182A410D	2-3-B	ED307572	14-D6	EH363276J1	9-FL1	EI422510J	7-X601
BVV1182A410E	2-3-C	ED307572	14-D7	EH363276J1	11-FL1	EI425184J	27-X1
BVV1182A420K	2-2-A	ED307572	14-D8	EH366894J1	7-SF741	EI425189J	14-IC102
BVV1182A420L	2-2-B	ED307572	14-D106	EH368948J1	9-FL3	EI425190J	27-IC1
BVV1182A420M	2-2-C	ED307572	14-D108	EH368948J1	11-FL3	EI425191J	27-IC2
BV402178J	7-MD1	ED307572	14-D109	EH370812J1	7-FL3	EI425194J	14-IC101
BV424907N00	3-54	ED307572	18-D801	EH373919J1	7-FL2	EI425240J	7-X401
BV424914N01	3-2	ED307572	18-D802	EH373920J1	7-FL4	EI425327J	7-X502
BV424915N01	3-1	ED307572	19-D2	EH373921J1	7-FL5	EI425359J	12-IC1-B
BV424919N08	3-49	ED307572	19-D3	EH373921J1	10-FL7	EI425537J	7-IC403
EC404196J	23-C22	ED307572	19-D5	EH373921J1	11-FL7	EI425668J	7-IC402
EC416655J	7-C501	ED307572	19-D6	EH378541J	19-IB2	EI427370J	11-IC1
EC418706J	23-C3	ED307572	19-D9	EH378541J	19-IB3	EI428000J	25-IC5
EC418706J	23-C4	ED307572	21-D1	EH382829J	27-FL82	EI428137J	25-IC4
EC418706J	23-C5	ED307572	21-D3	EH383057J	7-IB503	EI428143J	12-IC1-A
EC418706J	23-C6	ED307572	21-D21	EH383057J	19-IB1	EI428151J	7-IC601
EC418706J	23-C7	ED307572	21-D22	EH383083J	19-IB4	EI428189J	25-IC3
EC418706J	23-C8	ED307572	21-D23	EH383099J	19-IB7	EI428190J	25-X1
EC418706J	23-C9	ED307572	21-D24	EH394874J	9-FL4	EI428208J	7-X602
EC418759J	23-C13	ED307572	23-D10	EH394874J	11-FL4	EI428240J	7-IC602
EC418760J	23-C12	ED307572	23-D11	EH394875J	9-FL6	EI428244J	7-IC501
EC422101J	23-C1	ED307572	23-D12	EH397099J	7-IB502	EI428244J	19-IC1
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ED307572	7-D1	ED386031J	14-D5	EH422240J	25-DL4	EJ397357J	19-P18
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ED307572	7-D5	ED387783J	24-D21	EH425230J	7-FL601	EJ416549J	25-P4
ED307572	7-D7	ED387783J	24-D22	EH425932J	19-IB6	EJ416590J1	23-P2
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ED307572	7-D11	ED391005J	24-D24	EH428188J	25-DL1	EJ418748J	13-P2
ED307572	7-D12	ED397233J	7-D201	EH429919J	19-IB5	EJ418748J	14-P101
ED307572	7-D13	ED397233J	19-D4	EI364896	7-IC301	EJ418763J	7-P301
ED307572	7-D14	ED397614J	25-D1	EI364896	19-IC3	EJ418819J	18-PJ801
ED307572	7-D15	ED400876J	7-D671	EI366892	7-IC741	EJ422093J	13-P1
ED307572	7-D16	ED402181J	7-D305	EI368825M	7-X501	EJ422093J	14-P1
ED307572	7-D202	ED404221J	19-D1	EI368825M	19-X1	EJ422094J1	13-P3
ED307572	7-D301	ED405604J	7-D402	EI368829	7-X1	EJ422094J1	13-P4

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EJ422552J	12-PJ6
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EJ422554J	12-PJ5
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EO427368J	11-VL2
EO427369J	11-VL91
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EO428158J	23-L1
EO428167J	9-VL3
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MEMO

AKAI

MODEL VS-X480EGN
MODEL VS-X800EGN-N
MODEL VS-X1000EGN-N

SCHEMATIC DIAGRAMS AND PC BOARDS

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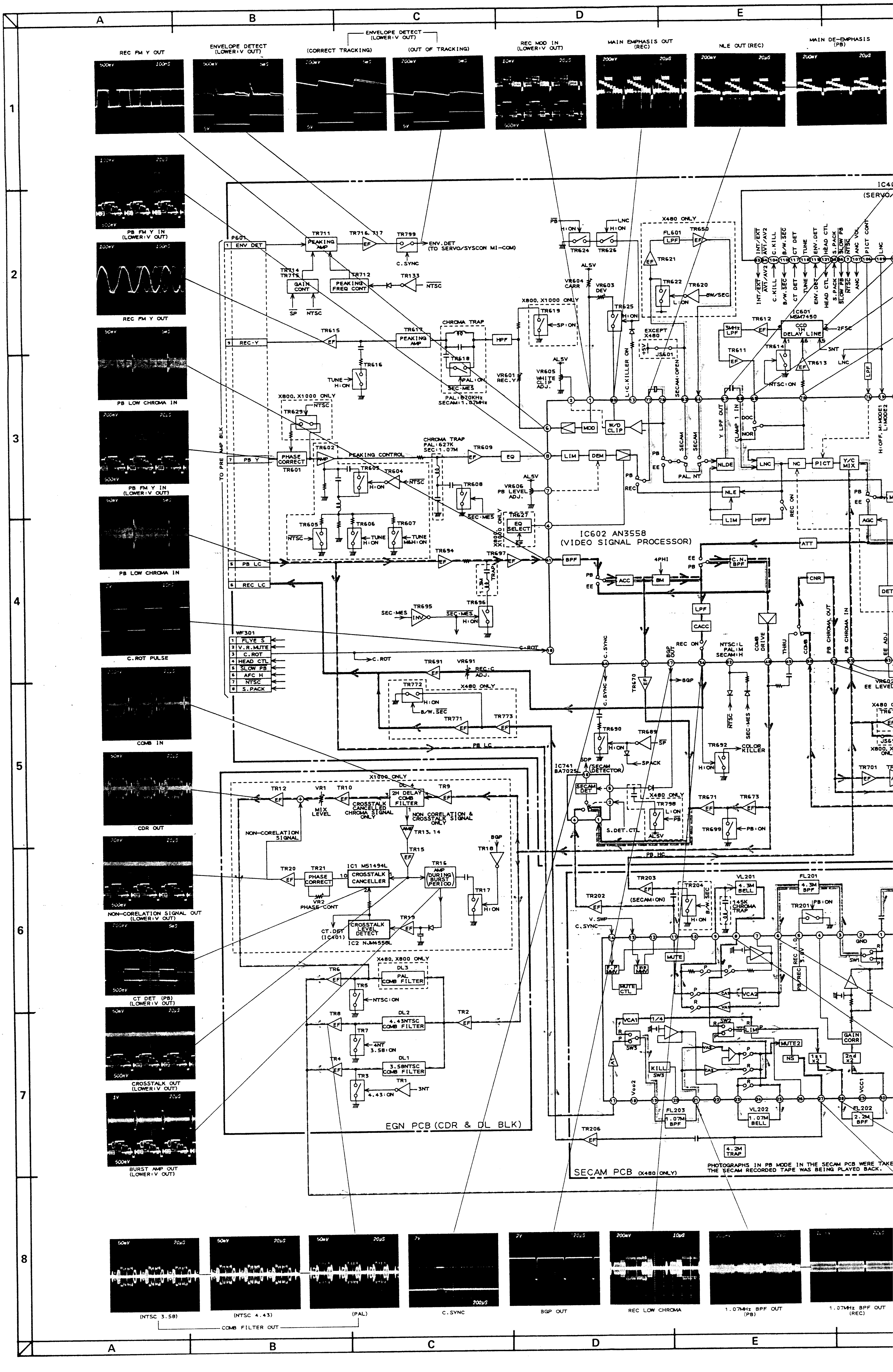
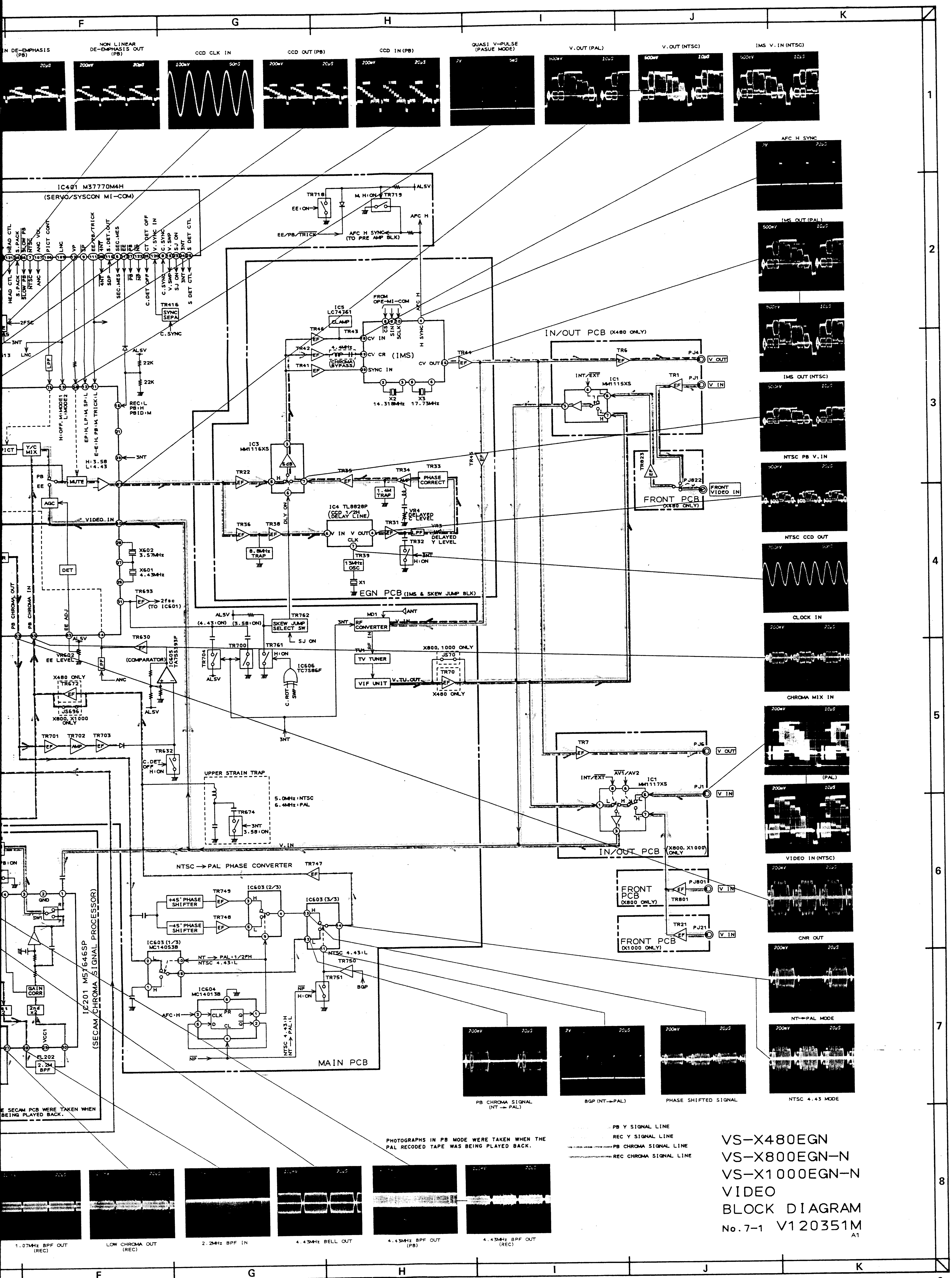

A
B
C
D
E
1
2
3
4
5
6
7
8
REC FM Y OUT
ENVELOPE DETECT (LOWER:V OUT)
ENVELOPE DETECT (LOWER:V OUT)
(CORRECT TRACKING)
(OUT OF TRACKING)
REC MOD IN (LOWER:V OUT)
MAIN EMPHASIS OUT (REC)
NLE OUT (REC)
MAIN DE-EMPHASIS (PB)
PB FM Y IN (LOWER:V OUT)
REC FM Y OUT
PB LOW CHROMA IN
PB FM Y IN (LOWER:V OUT)
PB LOW CHROMA IN
C.ROT PULSE
COMB IN
CDR OUT
NON-CORELATION SIGNAL OUT (LOWER:V OUT)
CT DET (PB) (LOWER:V OUT)
CROSSTALK OUT (LOWER:V OUT)
BURST AMP OUT (LOWER:V OUT)
(NTSC 3.58)
(NTSC 4.43)
(PAL)
COMB FILTER OUT
C.SYNC
BGP OUT
REC LOW CHROMA
1.07MHz BPF OUT (PB)
1.07MHz BPF OUT (REC)
P601
ENV DET
REC.Y
PB Y
PB LC
REC LC
TO PRE AMP BLK
WF301
FLYE S
V.R.MUTE
C.ROT
HEAD CTL
SLOW PB
AFC H
NTSC
S.PACK
TR711
PEAKING AMP
TR716, 717
TR799
ENV.DET (TO SERVO/SYSCON MI-COM)
C.SYNC
TR714 TR715
GAIN CONT
TR712
PEAKING FREQ CONT
TR133
SP
NTSC
TR615
TR617
PEAKING AMP
CHROMA TRAP
TR618
PAL:ON
SEC.MES
PAL:670KHz SECAM:1.07MHz
TR616
TUNE H:ON
X800, X1000 ONLY
TR629
PHASE CORRECT
TR601
TR602
AMP
PEAKING CONTROL
TR603
TR604
CHROMA TRAP PAL:627K SEC:1.07M
TR609
EQ
TR608
TR605
TR606
TR607
TUNE M&H:ON
TR694
TR697
TRAP
TR696
TR695
INV
SEC.MES
VR606 PB LEVEL ADJ.
TR627
EQ SELECT
X800, X1000 ONLY
IC602 AN3558 (VIDEO SIGNAL PROCESSOR)
HPF
LIM
DEM
MOD
W/D CLIP
BPF
ACC
BM
4PHI
C.N. BPF
LPF
CACC
COMB DRIVE
THRU
COMB
PB CHROMA OUT
PB CHROMA IN
NLDE
LNC
NC
PICT
Y/C MIX
NLE
LIM
HPF
REC ON
AGC
ATT
CNR
DET
EE LEVEL
PB
TR624
TR626
LNC
ALSV
VR604 CARR
VR603 DEV
X800, X1000 ONLY
TR619
SP:ON
TR625
H:ON
EXCEPT X480
JS601
L/C.KILLER ON
SECAM:OPEN
VR601 REC.Y
VR605 WHITE CLIP ADJ.
X480 ONLY
FL601
LPF
TR650
TR621
TR622
TR620
L:ON
BW/SEC
3MHz LPF
TR612
TR611
TR614
NTSC:ON
TR613
IC601 MSM7450
CCD 1H DELAY LINE
2FSC
3NT
LNC
Y LPF OUT
CLAMP 1 IN
DOC
NOR
SECAM
PAL NT
H/OFF, M:MODE1, L:MODE2
IC40
(SERVO/
INT/EXT AV1/AV2
C.KILL
B/W.SEC
CT DET
TUNE
ENV.DET
HEAD CTL
S.PACK
SLOW PB
NTSC
ANC VOL
PICT CONT
LNC
C.ROT
TR691
VR691 REC.C ADJ.
TR772
H:ON
B/W.SEC
X480 ONLY
TR771
TR773
PB LC
C.SYNC
BGP OUT
TR670
BGP
NTSC:L PAL:M SECAM:H
TR690
TR689
SP
S.PACK
IC741 BA7025L
SDP (SECAM DETECTOR)
SECAM DET
S.DET.CTL
X480 ONLY
TR798
L:ON
PB
ALSV
TR692
COLOR KILLER
SEC.MES
TR671
TR673
TR699
PB:ON
PB HC
TR701
X800, X1000 ONLY
X1000 ONLY
DL 4
TR12
VR1
TR10
MIX LEVEL
2H DELAY COMB FILTER
TR9
CROSSTALK CANCELLED CHROMA SIGNAL ONLY
NON CORELATION & CROSSTALK SIGNAL ONLY
TR13, 14
NON-CORELATION SIGNAL
TR15
TR20
TR21
PHASE CORRECT
IC1 M51494L
CROSSTALK CANCELLER
TR16
AMP (DURING BURST PERIOD)
BGP
TR18
TR17
H:ON
VR2 PHASE CONT
CT.DET (IC401)
CROSSTALK LEVEL DETECT
IC2 NJM4558L
TR19
X480, X800 ONLY
DL3
PAL COMB FILTER
TR6
TR5
NTSC:ON
TR8
DL2
4.43NTSC COMB FILTER
TR2
TR7
4NT 3.58:ON
TR4
DL1
3.58NTSC COMB FILTER
TR3
TR1
4.43:ON
3NT
EGN PCB (CDR & DL BLK)
TR203
VL201
4.3M BELL
FL201
4.3M BPF
TR202
(SECAM:ON)
TR204
B/W.SEC
H:ON
14SK CHROMA TRAP
TR201
PB:ON
V.SWP
C.SYNC
MUTE
MUTE CTL
REC 1.0V
PB/REC
VCA1
VCA2
1/4
SW3
SW2
LIM
MUTE2
NS
KILL SW3
FL203
1.07M BPF
VL202
1.07M BELL
FL202
2.2M BPF
GAIN CORR
VCC1
GND
SW1
TR206
4.2M TRAP
SECAM PCB (X480 ONLY)
PHOTOGRAPHS IN PB MODE IN THE SECAM PCB WERE TAKE THE SECAM RECORDED TAPE WAS BEING PLAYED BACK.



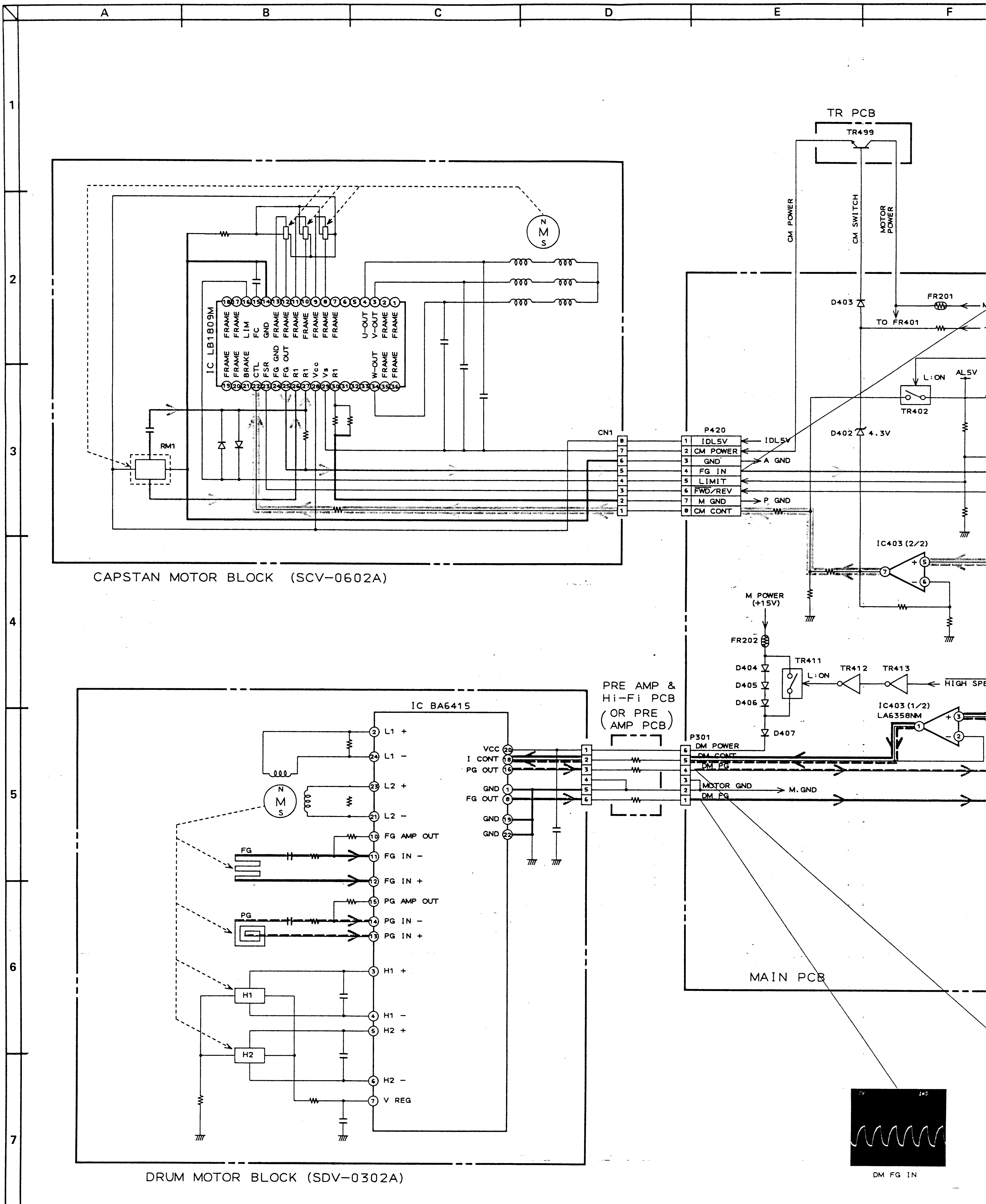
F
G
H
I
J
K
1
2
3
4
5
6
7
8
IN DE-EMPHASIS (PB)
NON LINEAR DE-EMPHASIS OUT (PB)
CCD CLK IN
CCD OUT (PB)
CCD IN (PB)
QUASI V-PULSE (PASUE MODE)
V.OUT (PAL)
V.OUT (NTSC)
IMS V.IN (NTSC)
AFC H SYNC
IMS OUT (PAL)
IMS OUT (NTSC)
NTSC PB V.IN
NTSC CCD OUT
CLOCK IN
CHROMA MIX IN
(PAL)
VIDEO IN (NTSC)
CNR OUT
NT→PAL MODE
NTSC 4.43 MODE
PB CHROMA SIGNAL (NT → PAL)
BGP (NT→PAL)
PHASE SHIFTED SIGNAL
1.07MHz BPF OUT (REC)
LOW CHROMA OUT (REC)
2.2MHz BPF IN
4.43MHz BELL OUT
4.43MHz BPF OUT (PB)
4.43MHz BPF OUT (REC)
IC401 M37770M4H
(SERVO/SYSCON MI-COM)
HEAD CTL
S.PACK
SLOW PB
NTSC
ANC VOL
PICT CONT
LNC
VP
SP
EE/PB/TRICK
3NT
S.DET.OUT
SEC.MES
EE
PB
NP
CT
DET OFF
V.SYNC IN
C.SYNC
V.SWP
SJ ON
S DET CTL
TR416
SYNC SEPA
2FSC
LPF
AL5V
22K
REC:L
PB:H
PBID:M
H:OFF, M:MODE1, L:MODE2
EP:H, LP:M, SP:L
E-E:H, PB:H, TRICK:L
H:3.58
L:4.43
Y/C MIX
PICT
MUTE
AGC
VIDEO.IN
DET
X602 3.57MHz
X601 4.43MHz
TR693
2fsc (TO IC601)
PB CHROMA OUT
PB CHROMA IN
EE ADJ
VR602 EE LEVEL
LPF
TR630
(COMPARATOR)
IC605 TA75393F
ANC
X480 ONLY
TR672
JS696
X800, X1000 ONLY
TR701
TR702
TR703
AMP
TR632
C.DET OFF H:ON
TR718
EE:ON
M.H:ON
TR719
AFC H
EE/PB/TRICK
AFC H SYNC (TO PRE AMP BLK)
FROM OPE-MI-COM
CS
SIN
SCLK
IC5 LC74761
CLAMP
TR46
TR43
TR42
TR41
CV IN
CV CR (IMS)
4.4MHz (CHROMA BYPASS)
SYNC IN
H SYNC
CV OUT
X2 14.318MHz
X3 17.73MHz
TR44
IC3 MM1116XS
6dB
TR22
TR35
TR34
TR33
PHASE CORRECT
1.4M TRAP
VR4 DELAYED C LEVEL
DLY ON
IC4 TL8828P (CCD 1/2H DELAY LINE)
V IN
V OUT
CLK
TR36
TR38
TR31
LPF
VR3 DELAYED Y LEVEL
TR32
H:ON
3NT
TR39
8.8MHz TRAP
13MHz OSC
X1
EGN PCB (IMS & SKEW JUMP BLK)
TR45
IN/OUT PCB (X480 ONLY)
TR6
PJ4
V OUT
TR1
PJ1
V IN
INT/EXT
IC1 MM1115XS
TR823
PJ822
FRONT VIDEO IN
FRONT PCB (X480 ONLY)
AL5V
(4.43:ON)
(3.58:ON)
TR762
SKEW JUMP SELECT SW
SJ ON
TR704
TR700
TR761
H:ON
IC606 TC7S86F
C.ROT
SWP
MD1
ANT
RF CONVERTER
TU.IN
RF IN
TV TUNER
VIF UNIT
V.TU.OUT
X800, 1000 ONLY
JS70
TR70
X480 ONLY
3NT
TR7
PJ6
V OUT
INT/EXT
AV1/AV2
IC1 MM1117XS
PJ1
V IN
IN/OUT PCB (X800, X1000 ONLY)
UPPER STRAIN TRAP
TR674
3NT
3.58:ON
5.0MHz:NTSC
6.4MHz:PAL
V.IN
NTSC → PAL PHASE CONVERTER
TR747
TR749
+45° PHASE SHIFTER
TR748
-45° PHASE SHIFTER
IC603 (2/3)
IC603 (3/3)
IC603 (1/3) MC14053B
NT → PAL:1/2FH
NTSC 4.43:L
NTSC 4.43:L
TR750
TR751
BGP
NP
H:ON
IC604 MC14013B
AFC-H
CLK
PR
CL
NTSC 4.43:H
NT → PAL:L
NP
MAIN PCB
FRONT PCB (X800 ONLY)
PJ801
TR801
V IN
TR21
PJ21
FRONT PCB (X1000 ONLY)
V IN
PB:ON
GND
SW1
GAIN CORR
2nd x2
VCC1
FL202
2.2M BPF
IC201 M51464SP
(SECAM CHROMA SIGNAL PROCESSOR)

E SECAM PCB WERE TAKEN WHEN BEING PLAYED BACK.

PHOTOGRAPHS IN PB MODE WERE TAKEN WHEN THE PAL RECODED TAPE WAS BEING PLAYED BACK.

PB Y SIGNAL LINE
REC Y SIGNAL LINE
PB CHROMA SIGNAL LINE
REC CHROMA SIGNAL LINE

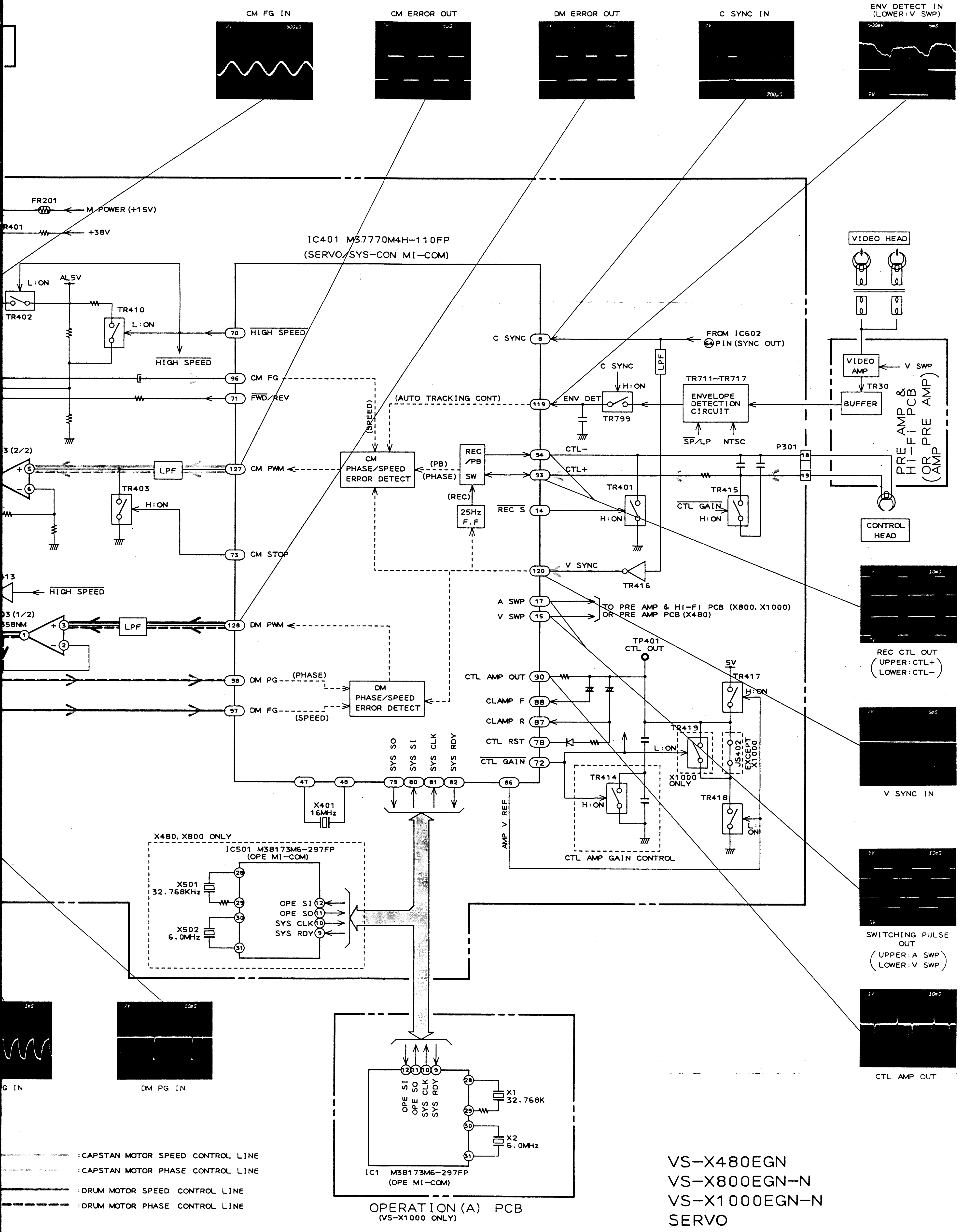
VS-X480EGN
VS-X800EGN-N
VS-X1000EGN-N
VIDEO
BLOCK DIAGRAM
No.7-1 V120351M
A1


A
B
C
D
E
F
1
2
3
4
5
6
7
8
TR PCB
TR499
CM POWER
CM SWITCH
MOTOR POWER
D403
FR201
TO FR401
L:ON
AL5V
TR402
D402
4.3V
IC LB1809M
FRAME
LIM
FC
GND
U-OUT
V-OUT
BRAKE
CTL
FSR
FG GND
FG OUT
R1
Vcc
Vs
W-OUT
RM1
CN1
P420
IDL5V
CM POWER
GND
FG IN
LIMIT
FWD/REV
M GND
CM CONT
A GND
P GND
IC403 (2/2)
CAPSTAN MOTOR BLOCK (SCV-0602A)
M POWER (+15V)
FR202
D404
D405
D406
D407
TR411
TR412
TR413
HIGH SPE
IC403 (1/2)
LA6358NM
PRE AMP & Hi-Fi PCB
(OR PRE AMP PCB)
IC BA6415
L1 +
L1 -
L2 +
L2 -
VCC
I CONT
PG OUT
GND
FG OUT
FG AMP OUT
FG IN -
FG IN +
PG AMP OUT
PG IN -
PG IN +
H1 +
H1 -
H2 +
H2 -
V REG
FG
PG
H1
H2
P301
DM POWER
DM CONT
DM PG
MOTOR GND
M.GND
DM FG
MAIN PCB
DM FG IN
DRUM MOTOR BLOCK (SDV-0302A)

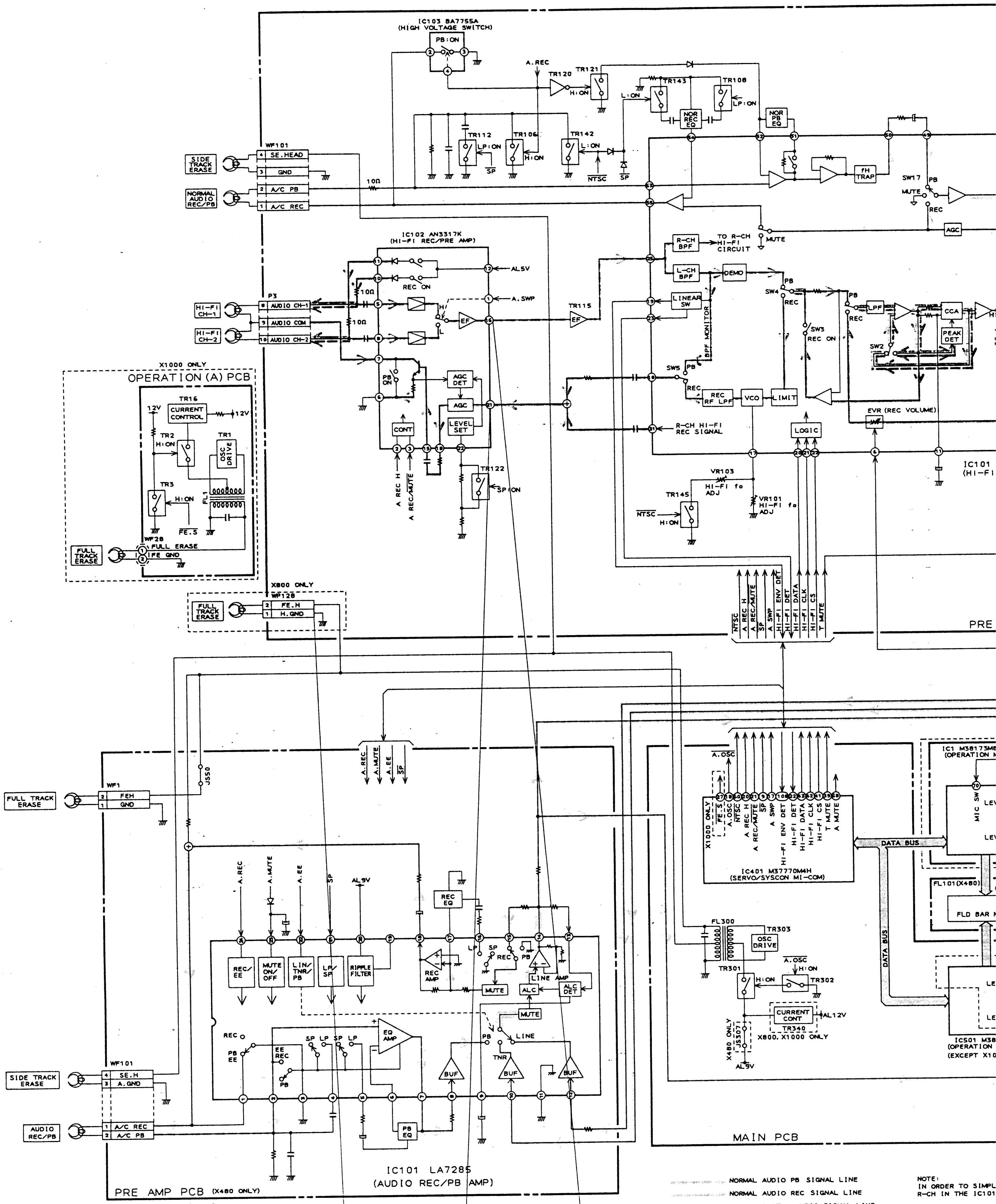
NOTE:

1. PHOTOGRAPHS EXCEPT [REC CTL OUT] WERE TAKEN DURING PB MODE.
2. EXCEPT [REC CTL OUT], [ENV DETECT IN] AND [SWITCHING PULSE OUT], PHOTOGRAPH'S SECOND LINE FROM THE BOTTOM IS DC 0V.

:CA
:CA
:DR
:DR

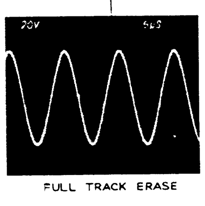

CM FG IN
CM ERROR OUT
DM ERROR OUT
C SYNC IN
ENV DETECT IN (LOWER:V SWP)
FR201
M POWER (+15V)
R401
+38V
IC401 M37770M4H-110FP
(SERVO/SYS-CON MI-COM)
L:ON
AL5V
TR402
TR410
L:ON
HIGH SPEED
HIGH SPEED
CM FG
FWD/REV
3 (2/2)
LPF
CM PWM
TR403
H:ON
CM STOP
13
HIGH SPEED
3 (1/2)
558NM
LPF
DM PWM
DM PG
(PHASE)
DM FG
(SPEED)
DM PHASE/SPEED ERROR DETECT
CM PHASE/SPEED ERROR DETECT
(SPEED)
(AUTO TRACKING CONT)
(PB)
(PHASE)
REC /PB SW
(REC)
25Hz F.F
REC S
C SYNC
FROM IC602 64 PIN (SYNC OUT)
LPF
C SYNC
H:ON
ENV DET
TR799
TR711~TR717
ENVELOPE DETECTION CIRCUIT
SP/LP
NTSC
CTL-
CTL+
P301
TR401
H:ON
TR415
CTL GAIN
H:ON
V SYNC
TR416
A SWP
V SWP
TO PRE AMP & HI-FI PCB (X800, X1000) OR PRE AMP PCB (X480)
TP401
CTL OUT
5V
TR417
H:ON
CTL AMP OUT
CLAMP F
CLAMP R
CTL RST
CTL GAIN
TR419
L:ON
JS402 EXCEPT X1000
X1000 ONLY
TR414
H:ON
TR418
L:ON
AMP V REF
CTL AMP GAIN CONTROL
SYS SO
SYS SI
SYS CLK
SYS RDY
X401 16MHz
X480, X800 ONLY
IC501 M38173M6-297FP (OPE MI-COM)
X501 32.768KHz
X502 6.0MHz
OPE SI
OPE SO
SYS CLK
SYS RDY
VIDEO HEAD
VIDEO AMP
V SWP
TR30
BUFFER
PRE AMP & HI-FI PCB (OR PRE AMP)
CONTROL HEAD
REC CTL OUT (UPPER:CTL+ LOWER:CTL-)
V SYNC IN
SWITCHING PULSE OUT (UPPER:A SWP LOWER:V SWP)
CTL AMP OUT
G IN
DM PG IN
OPE SI
OPE SO
SYS CLK
SYS RDY
X1 32.768K
X2 6.0MHz
IC1 M38173M6-297FP (OPE MI-COM)
OPERATION (A) PCB (VS-X1000 ONLY)
:CAPSTAN MOTOR SPEED CONTROL LINE
:CAPSTAN MOTOR PHASE CONTROL LINE
:DRUM MOTOR SPEED CONTROL LINE
:DRUM MOTOR PHASE CONTROL LINE

VS-X480EGN
VS-X800EGN-N
VS-X1000EGN-N
SERVO
BLOCK DIAGRAM
No.7-2 V120352M
A1

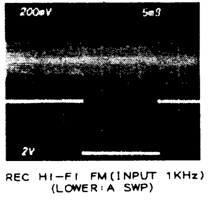

IC103 BA7755A (HIGH VOLTAGE SWITCH)
PB:ON
A.REC
TR120
TR121
TR143
TR108
NOR REC EQ
NOR PB EQ
LP:ON
L:ON
TR112
TR106
TR142
H:ON
NTSC
SP
fH TRAP
SW17
PB
MUTE
REC
AGC
WF101
SE.HEAD
GND
A/C PB
A/C REC
SIDE TRACK ERASE
NORMAL AUDIO REC/PB
10Ω
IC102 AN3317K (HI-FI REC/PRE AMP)
AL5V
A.SWP
REC ON
P3
AUDIO CH-1
AUDIO COM
AUDIO CH-2
HI-FI CH-1
HI-FI CH-2
EF
TR115
AGC DET
AGC
LEVEL SET
CONT
PB ON
A REC H
A REC/MUTE
TR122
SP:ON
R-CH BPF
L-CH BPF
TO R-CH HI-FI CIRCUIT
DEMO
LINEAR SW
BPF MONITOR
SW4
SW3
SW5
SW2
REC ON
LPF
CCA
PEAK DET
REC RF LPF
VCO
LIMIT
LOGIC
EVR (REC VOLUME)
R-CH HI-FI REC SIGNAL
VR103 HI-FI fo ADJ
VR101 HI-FI fo ADJ
TR145
IC101 (HI-FI
X1000 ONLY
OPERATION (A) PCB
TR16
CURRENT CONTROL
12V
TR2
TR1
OSC DRIVE
TR3
FL1
FE.S
WF28
FULL ERASE
FE GND
FULL TRACK ERASE
X800 ONLY
WF128
FE.H
H.GND
NTSC
A REC H
A REC/MUTE
SP
SWP
HI-FI ENV DET
HI-FI DET
HI-FI DATA
HI-FI CLK
HI-FI CS
T MUTE
A MUTE
PRE
A.REC
A.MUTE
A.EE
SP
J550
WF1
FEH
GND
AL9V
REC EQ
REC/EE
MUTE ON/OFF
LIN/TNR/PB
LP/SP
RIPPLE FILTER
REC AMP
LINE AMP
MUTE
ALC
ALC DET
EQ AMP
BUF
TNR
LINE
PB EQ
SE.H
A.GND
AUDIO REC/PB
IC101 LA7285 (AUDIO REC/PB AMP)
PRE AMP PCB (X480 ONLY)
A.OSC
X1000 ONLY
FE.S
IC401 M37770M4H (SERVO/SYSCON MI-COM)
DATA BUS
FL300
TR303
TR301
TR302
CURRENT CONT
TR340
AL12V
X480 ONLY
J507
X800, X1000 ONLY
AL9V
MAIN PCB
IC1 M38173M6 (OPERATION M
MIC SW
LEV
FL101(X480)
FLD BAR
ICS01 M38 (OPERATION (EXCEPT X10
A B C D E
1 2 3 4 5 6 7 8

NORMAL AUDIO PB SIGNAL LINE
NORMAL AUDIO REC SIGNAL LINE
SIF & DIGITAL AUDIO SIGNAL LINE
AUDIO PB SIGNAL LINE
AUDIO REC SIGNAL LINE

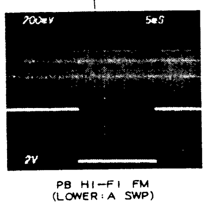
NOTE:
IN ORDER TO SIMPL
R-CH IN THE IC101



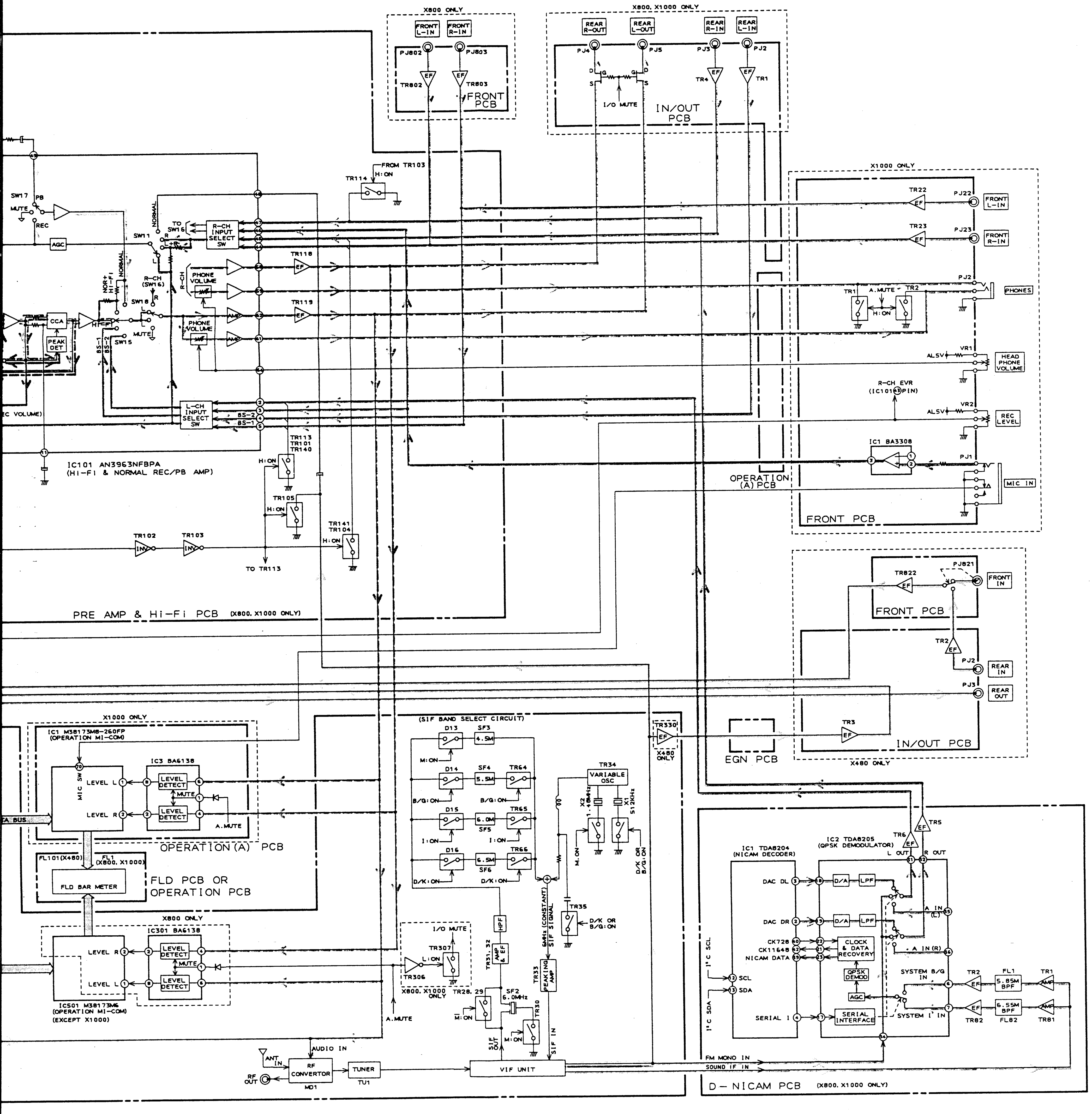
FULL TRACK ERASE



REC HI-FI FM(INPUT 1KHz)
(LOWER:A SWP)

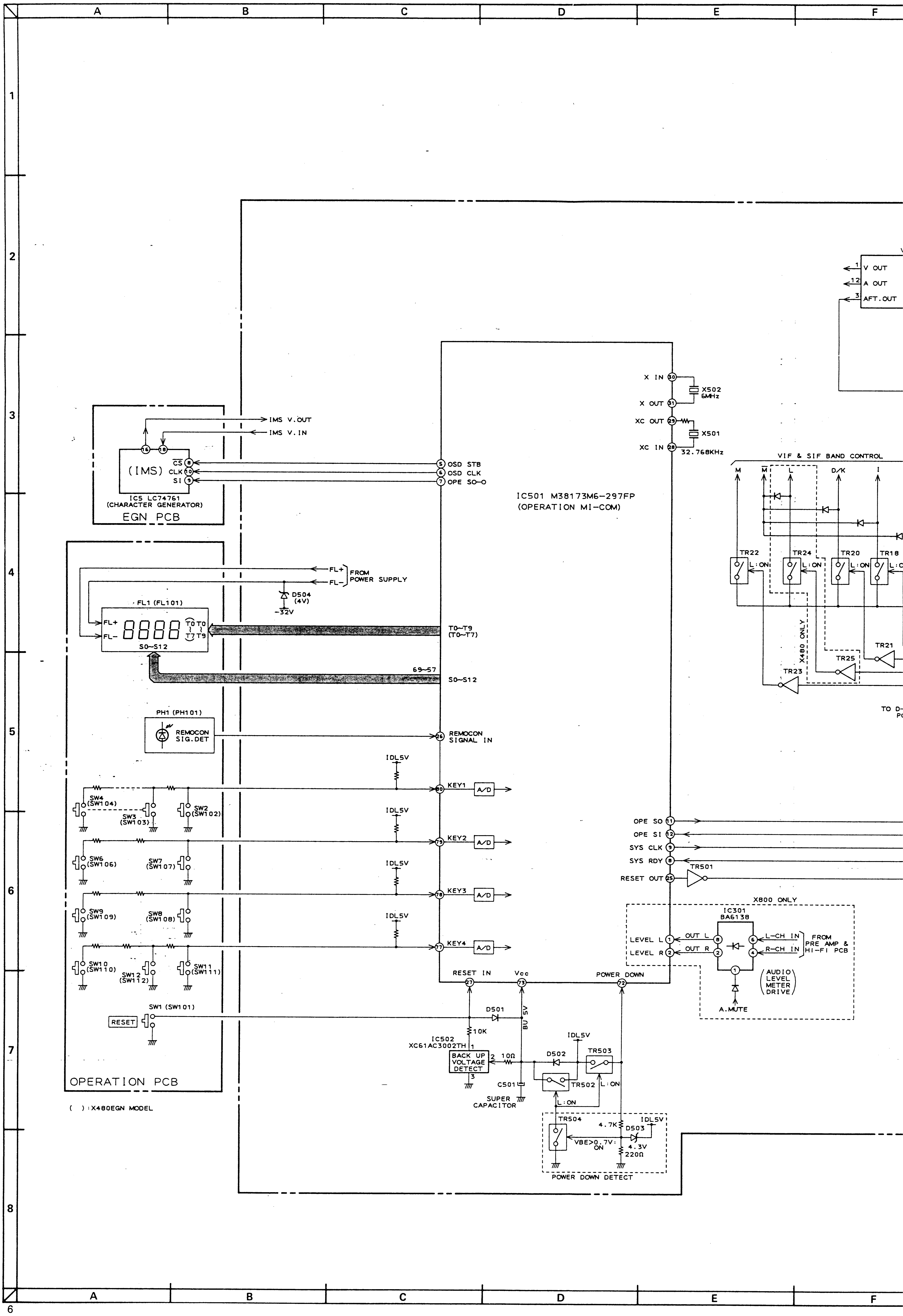


PB HI-FI FM
(LOWER:A SWP)


X800 ONLY
FRONT L-IN
FRONT R-IN
PJ802
PJ803
TR802
TR803
FRONT PCB
X800, X1000 ONLY
REAR R-OUT
REAR L-OUT
REAR R-IN
REAR L-IN
PJ4
PJ5
PJ3
PJ2
TR4
TR1
I/O MUTE
IN/OUT PCB
FROM TR103
TR114
H:ON
SW17
PB
MUTE
REC
AGC
SW11
NORMAL
TO SW16
R-CH INPUT SELECT SW
TR118
TR119
PHONE VOLUME
R-CH (SW16)
NOR+ Hi-Fi
SW18
MUTE
SW15
CCA
PEAK DET
BS-1
BS-2
L-CH INPUT SELECT SW
EC VOLUME)
TR113
TR101
TR140
TR105
TR141
TR104
IC101 AN3963NFBPA
(Hi-Fi & NORMAL REC/PB AMP)
TR102
TR103
TO TR113
PRE AMP & Hi-Fi PCB (X800, X1000 ONLY)
X1000 ONLY
TR22
PJ22
TR23
PJ23
PJ2
PHONES
TR1
A.MUTE
TR2
VR1
AL5V
HEAD PHONE VOLUME
R-CH EVR
(IC101 43 PIN)
VR2
REC LEVEL
IC1 BA3308
PJ1
MIC IN
OPERATION (A) PCB
FRONT PCB
PJ821
TR822
FRONT IN
TR2
REAR IN
REAR OUT
TR3
EGN PCB
IN/OUT PCB
X480 ONLY
TR330
X1000 ONLY
IC1 M38173M8-260FP
(OPERATION MI-COM)
IC3 BA6138
MIC SW
LEVEL L
LEVEL R
LEVEL DETECT
MUTE
A.MUTE
TA BUS
OPERATION (A) PCB
FL101(X480)
FL1 (X800, X1000)
FLD BAR METER
FLD PCB OR OPERATION PCB
X800 ONLY
IC301 BA6138
IC501 M38173M6
(OPERATION MI-COM)
(EXCEPT X1000)
(SIF BAND SELECT CIRCUIT)
D13
SF3
4.5M
M:ON
D14
SF4
TR64
5.5M
B/G:ON
D15
TR65
6.0M
SF5
I:ON
D16
TR66
6.5M
SF6
D/K:ON
TR34
VARIABLE OSC
X2 1.48MHz
X1 512KHz
M:ON
D/K OR B/G:ON
TR35
HPF
TR31, 32 AMP & EF
TR33 PEAKING AMP
6MHz (CONSTANT) SIF SIGNAL
I/O MUTE
TR307
L:ON
TR306
X800, X1000 ONLY
TR28, 29
SF2 6.0MHz
TR30
SIF OUT
SIF IN
A.MUTE
AUDIO IN
ANT IN
RF OUT
RF CONVERTOR
MD1
TUNER
TU1
VIF UNIT
TR5
TR6
IC1 TDA8204
(NICAM DECODER)
IC2 TDA8205
(QPSK DEMODULATOR)
L OUT
R OUT
DAC DL
DAC DR
D/A
LPF
A IN (L)
A IN (R)
CK728
CK11648
NICAM DATA
CLOCK & DATA RECOVERY
QPSK DEMOD
AGC
I²C SCL
I²C SDA
SCL
SDA
SERIAL I
SERIAL INTERFACE
SYSTEM B/G IN
SYSTEM I IN
TR2
FL1
5.85M BPF
TR1
AMP
TR82
6.55M BPF
FL82
TR81
FM MONO IN
SOUND IF IN
D-NICAM PCB (X800, X1000 ONLY)

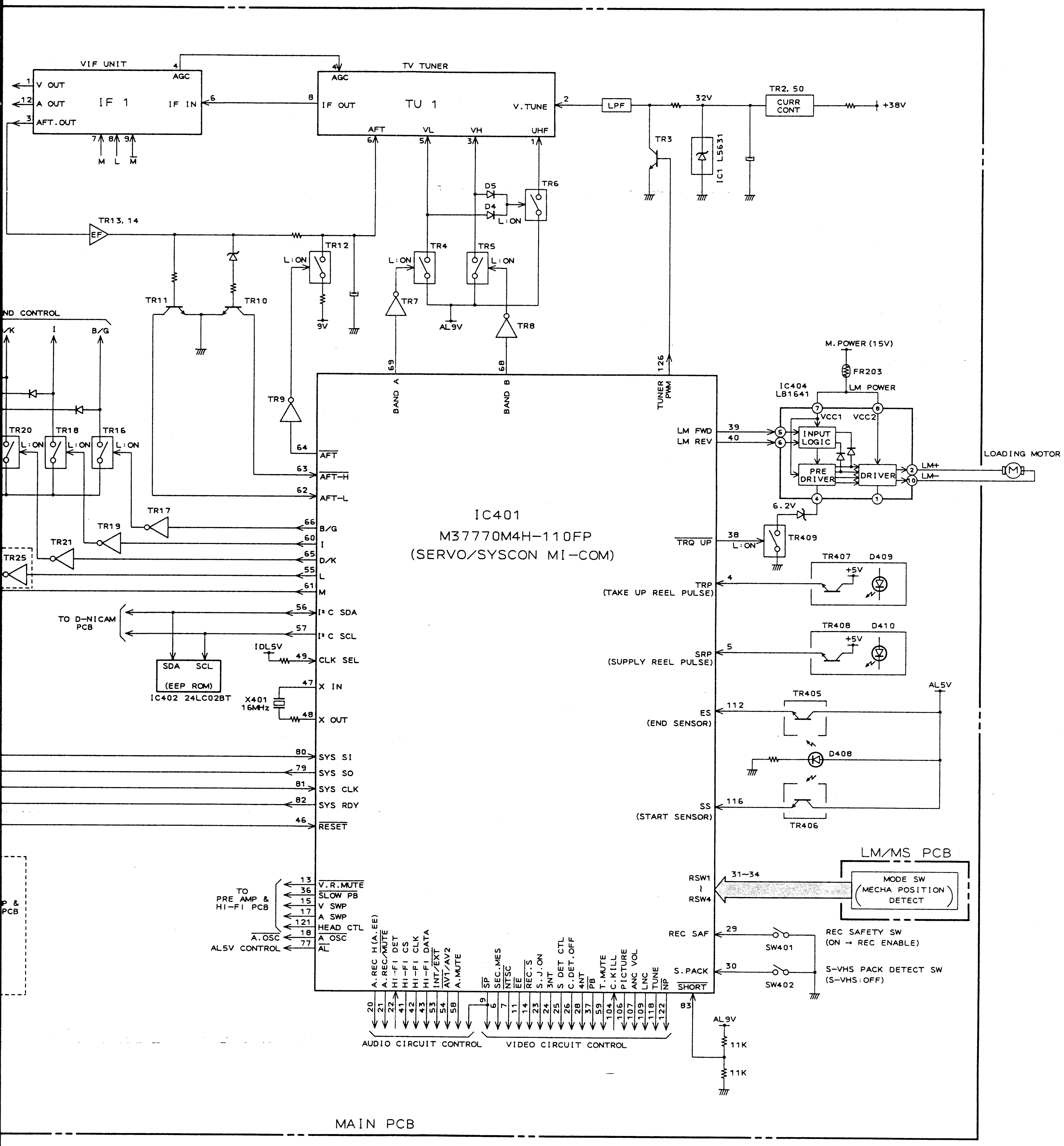
NOTE:
IN ORDER TO SIMPLIFY THE DIAGRAM,
R-CH IN THE IC101 IS OMITTED.

VS-X480EGN
VS-X800EGN-N
VS-X1000EGN-N
AUDIO
BLOCK DIAGRAM
No.7-3 V120353M
A1


A
B
C
D
E
F
1
2
3
4
5
6
7
8
IMS V.OUT
IMS V.IN
(IMS)
CS
CLK
SI
IC5 LC74761
(CHARACTER GENERATOR)
EGN PCB
OSD STB
OSD CLK
OPE SO-O
IC501 M38173M6-297FP
(OPERATION MI-COM)
X IN
X OUT
XC OUT
XC IN
X502
6MHz
X501
32.768KHz
FL+
FL-
FROM
POWER SUPPLY
D504
(4V)
-32V
FL1 (FL101)
8888
T0 T9
T7
S0-S12
T0-T9
(T0-T7)
69-57
S0-S12
PH1 (PH101)
REMOCON
SIG.DET
REMOCON
SIGNAL IN
IDL5V
KEY1
KEY2
KEY3
KEY4
A/D
SW4
(SW104)
SW3
(SW103)
SW2
(SW102)
SW6
(SW106)
SW7
(SW107)
SW9
(SW109)
SW8
(SW108)
SW10
(SW110)
SW12
(SW112)
SW11
(SW111)
SW1 (SW101)
RESET
OPERATION PCB
( ) :X480EGN MODEL
RESET IN
Vcc
POWER DOWN
D501
BU 5V
10K
IC502
XC61AC3002TH
BACK UP
VOLTAGE
DETECT
10Ω
C501
SUPER
CAPACITOR
D502
TR503
TR502
L:ON
TR504
4.7K
D503
VBE>0.7V:
ON
4.3V
220Ω
POWER DOWN DETECT
OPE SO
OPE SI
SYS CLK
SYS RDY
RESET OUT
TR501
X800 ONLY
IC301
BA6138
LEVEL L
LEVEL R
OUT L
OUT R
L-CH IN
R-CH IN
FROM
PRE AMP &
HI-FI PCB
AUDIO
LEVEL
METER
DRIVE
A.MUTE
V OUT
A OUT
AFT.OUT
VIF & SIF BAND CONTROL
M
M̄
L
D/K
I
TR22
TR24
TR20
TR18
L:ON
X480 ONLY
TR21
TR25
TR23
TO D-
P

MODE SWITCH TRUTH TABLE

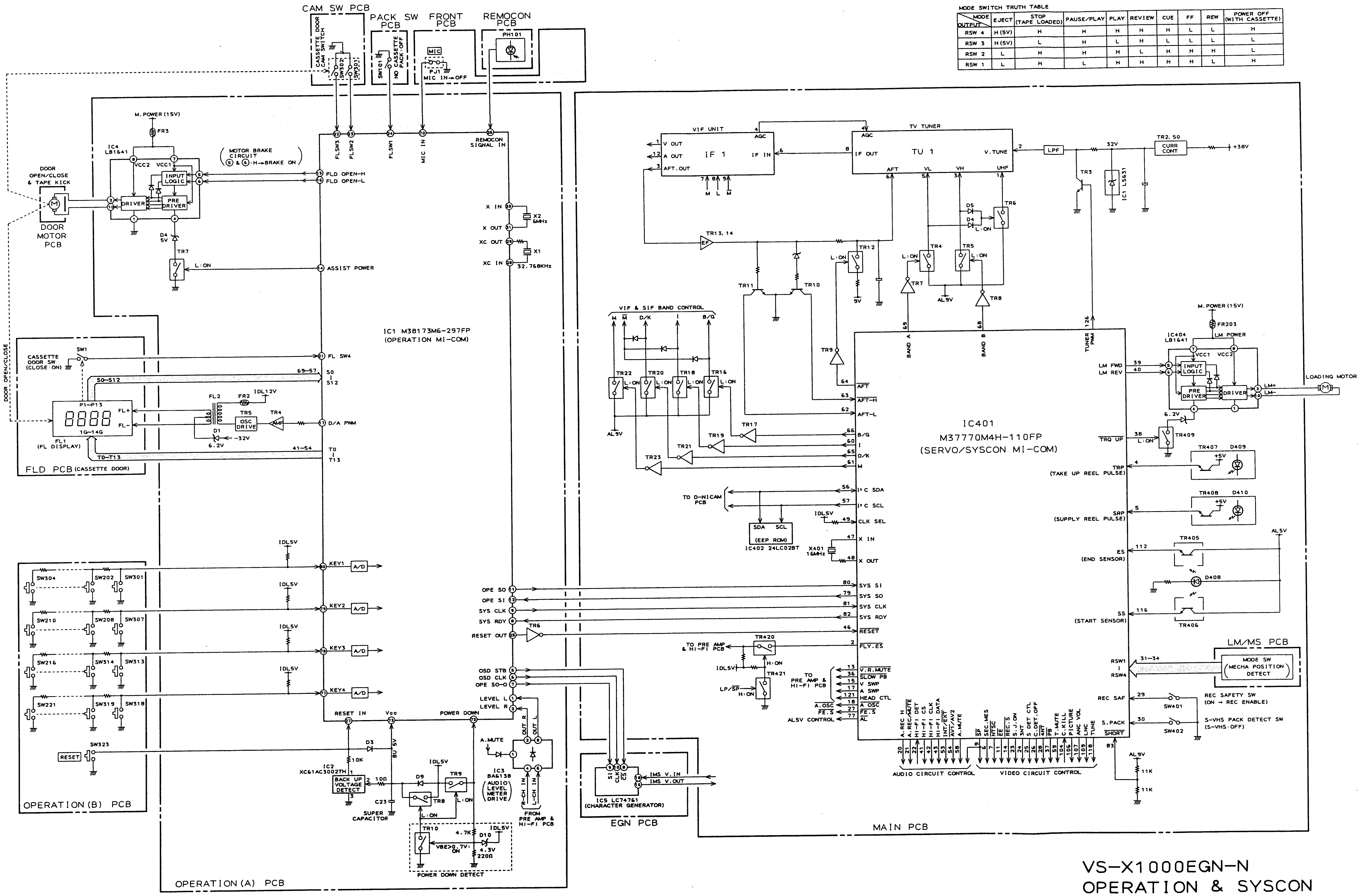
MODE / OUTPUT	EJECT	STOP (TAPE LOADED)	PAUSE/PLAY	PLAY	REVIEW	CUE	FF	REW	POWER OFF (WITH CASSETTE)
RSW 4	H (5V)	H	H	H	H	H	L	L	H
RSW 3	H (5V)	L	H	L	H	L	L	L	L
RSW 2	L	H	H	H	L	H	H	H	L
RSW 1	L	H	L	H	H	H	H	L	H


VIF UNIT
IF 1
AGC
V OUT
A OUT
AFT.OUT
IF IN
M L M
TV TUNER
TU 1
IF OUT
V.TUNE
AFT VL VH UHF
LPF
32V
TR2, 50
CURR CONT
+38V
TR3
IC1 L5631
TR6
D5
D4
L:ON
TR13, 14
EF
TR12
TR4
TR5
TR7
TR8
AL9V
9V
TR11
TR10
TR9
ND CONTROL
/K I B/G
TR20 TR18 TR16
TR17
TR19
TR21
TR25
BAND A
BAND B
TUNER PWM
IC401
M37770M4H-110FP
(SERVO/SYSCON MI-COM)
AFT
AFT-H
AFT-L
B/G
I
D/K
L
M
TO D-NICAM PCB
I²C SDA
I²C SCL
IDL5V
CLK SEL
SDA SCL
(EEP ROM)
IC402 24LC02BT
X401 16MHz
X IN
X OUT
SYS SI
SYS SO
SYS CLK
SYS RDY
RESET
TO PRE AMP & HI-FI PCB
V.R.MUTE
SLOW PB
V SWP
A SWP
HEAD CTL
A.OSC
AL
AL5V CONTROL
A.REC H(A.EE)
A.REC/MUTE
HI-FI DET
HI-FI CS
HI-FI CLK
HI-FI DATA
INT/EXT
AV1/AV2
A.MUTE
SP
SEC.MES
NTSC
EE
REC.S
S.J.ON
3NT
S DET CTL
C.DET.OFF
4NT
PB
T.MUTE
C.KILL
PICTURE
ANC VOL
LNC
TUNE
NP
AUDIO CIRCUIT CONTROL
VIDEO CIRCUIT CONTROL
M.POWER (15V)
FR203
IC404 LB1641
LM POWER
VCC1 VCC2
LM FWD
LM REV
INPUT LOGIC
PRE DRIVER
DRIVER
LM+
LM−
LOADING MOTOR
6.2V
TRQ UP
TR409
TR407 D409
+5V
TRP (TAKE UP REEL PULSE)
TR408 D410
SRP (SUPPLY REEL PULSE)
AL5V
TR405
ES (END SENSOR)
D408
SS (START SENSOR)
TR406
LM/MS PCB
MODE SW (MECHA POSITION DETECT)
RSW1 ~ RSW4
31~34
REC SAF
SW401
REC SAFETY SW (ON → REC ENABLE)
S.PACK
SHORT
SW402
S-VHS PACK DETECT SW (S-VHS:OFF)
11K
11K
MAIN PCB

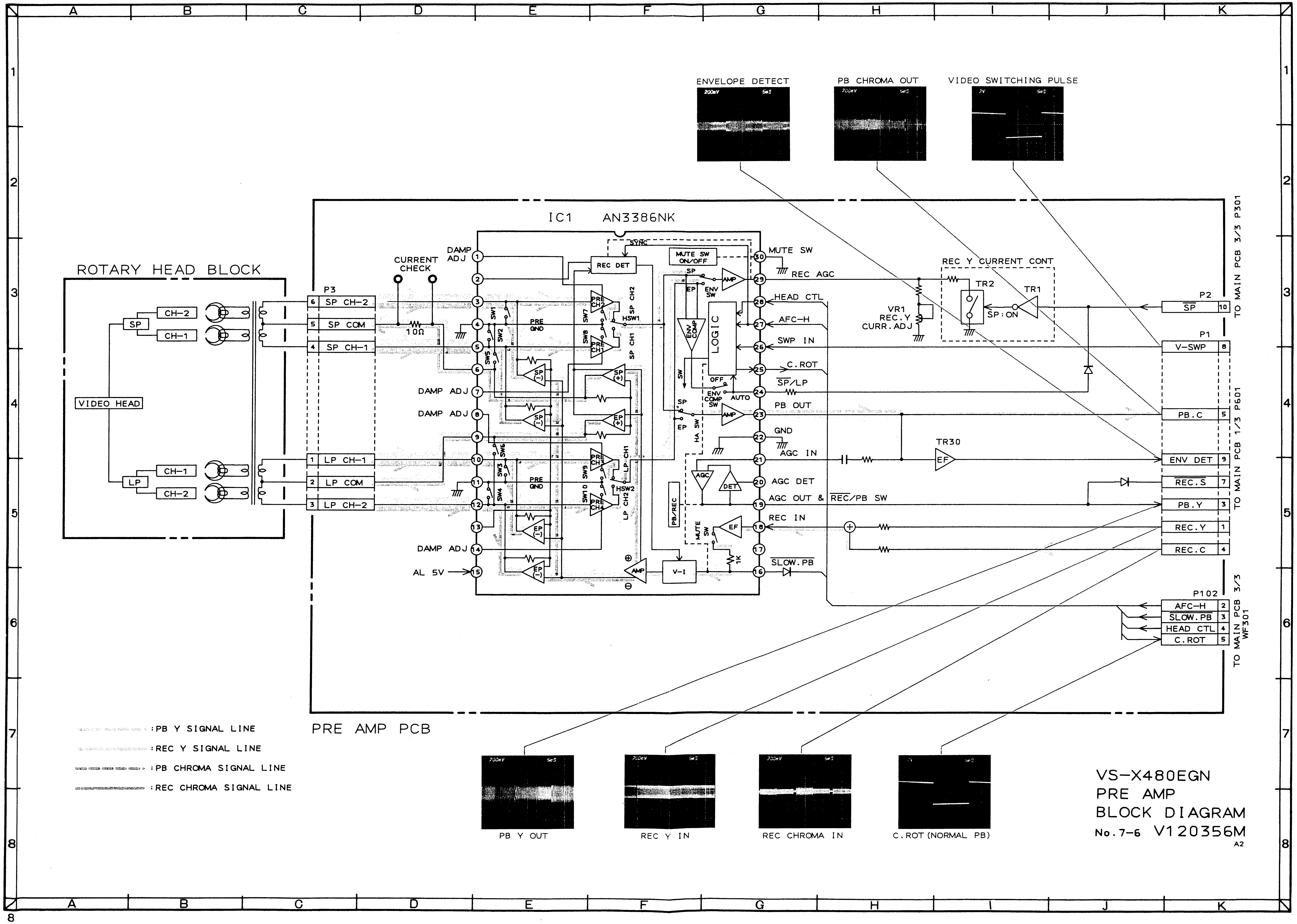
VS-X480EGN
VS-X800EGN-N
OPERATION & SYSCON
BLOCK DIAGRAM
No.7-4 V120354M
A1

MODE SWITCH TRUTH TABLE

OUTPUT \ MODE	EJECT	STOP (TAPE LOADED)	PAUSE/PLAY	PLAY	REVIEW	CUE	FF	REW	POWER OFF (WITH CASSETTE)
RSW 4	H (5V)	H	H	H	H	H	L	L	H
RSW 3	H (5V)	L	H	L	H	L	L	L	L
RSW 2	L	H	H	H	L	H	H	H	L
RSW 1	L	H	L	H	H	H	H	L	H


CAM SW PCB
CASSETTE DOOR CAM SWITCH
SW302
SW301
PACK SW PCB
SW101
NO CASSETTE PACK:OFF
FRONT PCB
MIC
PJ1
MIC IN→OFF
REMOCON PCB
PH101
FLSW3
FLSW2
FLSW1
MIC IN
REMOCON SIGNAL IN
M.POWER (15V)
FR3
IC4 LB1641
VCC2
VCC1
INPUT LOGIC
DRIVER
PRE DRIVER
MOTOR BRAKE CIRCUIT (5 & 6:H→BRAKE ON)
FLD OPEN-H
FLD OPEN-L
DOOR OPEN/CLOSE & TAPE KICK
DOOR MOTOR PCB
D4 5V
TR7
L:ON
ASSIST POWER
X IN
X OUT
XC OUT
XC IN
X2 6MHz
X1 32.768KHz
IC1 M38173M6-297FP (OPERATION MI-COM)
DOOR OPEN/CLOSE
CASSETTE DOOR SW (CLOSE:ON)
SW1
FL SW4
S0~S12
69~57
P1~P13
FL+
FL-
1G~14G
FL1 (FL DISPLAY)
FL2
FR2
IDL12V
TR5
OSC DRIVE
TR4
AMP
D/A PWM
D1 6.2V
-32V
T0~T13
41~54
FLD PCB (CASSETTE DOOR)
IDL5V
KEY1
KEY2
KEY3
KEY4
A/D
SW304
SW202
SW301
SW210
SW208
SW307
SW216
SW314
SW313
SW221
SW319
SW318
SW323
RESET
OPERATION (B) PCB
OPE SO
OPE SI
SYS CLK
SYS RDY
RESET OUT
TR6
OSD STB
OSD CLK
OPE SO-O
LEVEL L
LEVEL R
RESET IN
Vcc
POWER DOWN
D3
10K
BU 5V
IC2 XC61AC3002TH
BACK UP VOLTAGE DETECT
10Ω
C23
SUPER CAPACITOR
D9
TR9
TR8
L:ON
TR10
4.7K
D10
VBE>0.7V: ON
4.3V
220Ω
POWER DOWN DETECT
A.MUTE
IC3 BA6138 (AUDIO LEVEL METER DRIVE)
OUT R
OUT L
R-CH IN
L-CH IN
FROM PRE AMP & HI-FI PCB
OPERATION (A) PCB
SI
CLK
CS
IMS V.IN
IMS V.OUT
IC5 LC74761 (CHARACTER GENERATOR)
EGN PCB
VIF UNIT
IF 1
V OUT
A OUT
AFT.OUT
AGC
IF IN
M L M
TV TUNER
TU 1
IF OUT
V.TUNE
AFT
VL
VH
UHF
LPF
32V
TR2, 50
CURR CONT
+38V
TR3
IC1 L5631
D5
D4
TR6
TR13, 14
EF
TR12
9V
TR4
TR5
AL9V
TR7
TR8
TR11
TR10
VIF & SIF BAND CONTROL
M
D/K
I
B/G
TR22
TR20
TR18
TR16
TR9
TR17
TR19
TR21
TR23
BAND A
BAND B
TUNER PWM
AFT-H
AFT-L
IC401 M37770M4H-110FP (SERVO/SYSCON MI-COM)
TO D-NICAM PCB
I²C SDA
I²C SCL
CLK SEL
SDA SCL (EEP ROM)
IC402 24LC02BT
X401 16MHz
SYS SI
SYS SO
SYS CLK
SYS RDY
RESET
FLY.ES
TO PRE AMP & HI-FI PCB
TR420
TR421
H:ON
LP/SP
V.R.MUTE
SLOW PB
V SWP
A SWP
HEAD CTL
A.OSC
FE.S
AL
AL5V CONTROL
A.REC H
A.REC/MUTE
HI-FI DET
HI-FI CS
HI-FI CLK
HI-FI DATA
INT/EXT
AV1/AV2
A.MUTE
SP
SEC.MES
NTSC
EE
REC.S
S.J.ON
3NT
S DET CTL
C.DET.OFF
4NT
PB
T.MUTE
C.KILL
PICTURE
ANC VOL
LNC
TUNE
AUDIO CIRCUIT CONTROL
VIDEO CIRCUIT CONTROL
M.POWER (15V)
FR203
IC404 LB1641
LM POWER
LM FWD
LM REV
LOADING MOTOR
LM+
LM-
6.2V
TRQ UP
TR409
TR407
D409
+5V
TRP (TAKE UP REEL PULSE)
TR408
D410
SRP (SUPPLY REEL PULSE)
AL5V
TR405
ES (END SENSOR)
D408
SS (START SENSOR)
TR406
LM/MS PCB
MODE SW (MECHA POSITION DETECT)
RSW1 ~ RSW4
31~34
REC SAF
SW401
REC SAFETY SW (ON → REC ENABLE)
S.PACK
SHORT
SW402
S-VHS PACK DETECT SW (S-VHS:OFF)
11K
MAIN PCB

VS-X1000EGN-N
OPERATION & SYSCON
BLOCK DIAGRAM
No.7-5 V120355M
A1


A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8
ENVELOPE DETECT
PB CHROMA OUT
VIDEO SWITCHING PULSE
IC1 AN3386NK
ROTARY HEAD BLOCK
SP
CH-2
CH-1
VIDEO HEAD
LP
CH-1
CH-2
P3
6 SP CH-2
5 SP COM
4 SP CH-1
1 LP CH-1
2 LP COM
3 LP CH-2
CURRENT CHECK
10Ω
DAMP ADJ
DAMP ADJ
DAMP ADJ
DAMP ADJ
AL 5V
SYNC
REC DET
MUTE SW ON/OFF
SW1
SW2
SW3
SW4
SW5
SW6
SW7
SW8
SW9
SW10
PRE GND
PRE GND
PRE CH1
PRE CH2
PRE CH3
PRE CH4
SP CH2
SP CH1
LP CH1
LP CH2
HSW1
HSW2
SP (−)
SP (+)
EP (−)
EP (+)
ENV COMP
LOGIC
SP
EP
ENV SW
AMP
SW
OFF
ENV COMP SW
AUTO
HA SW
AGC
DET
PB/REC
MUTE SW
EF
1K
AMP
V-I
⊕
⊖
MUTE SW
REC AGC
HEAD CTL
AFC-H
SWP IN
C.ROT
SP/LP
PB OUT
GND
AGC IN
AGC DET
AGC OUT & REC/PB SW
REC IN
SLOW.PB
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
REC Y CURRENT CONT
TR2
TR1
SP:ON
VR1 REC.Y CURR.ADJ
TR30
EF
P2
SP 10
TO MAIN PCB 3/3 P301
P1
V-SWP 8
PB.C 5
ENV DET 9
REC.S 7
PB.Y 3
REC.Y 1
REC.C 4
TO MAIN PCB 1/3 P601
P102
AFC-H 2
SLOW.PB 3
HEAD CTL 4
C.ROT 5
TO MAIN PCB 3/3 WF301
PRE AMP PCB
PB Y OUT
REC Y IN
REC CHROMA IN
C.ROT (NORMAL PB)
200mV
5mS
2V
8

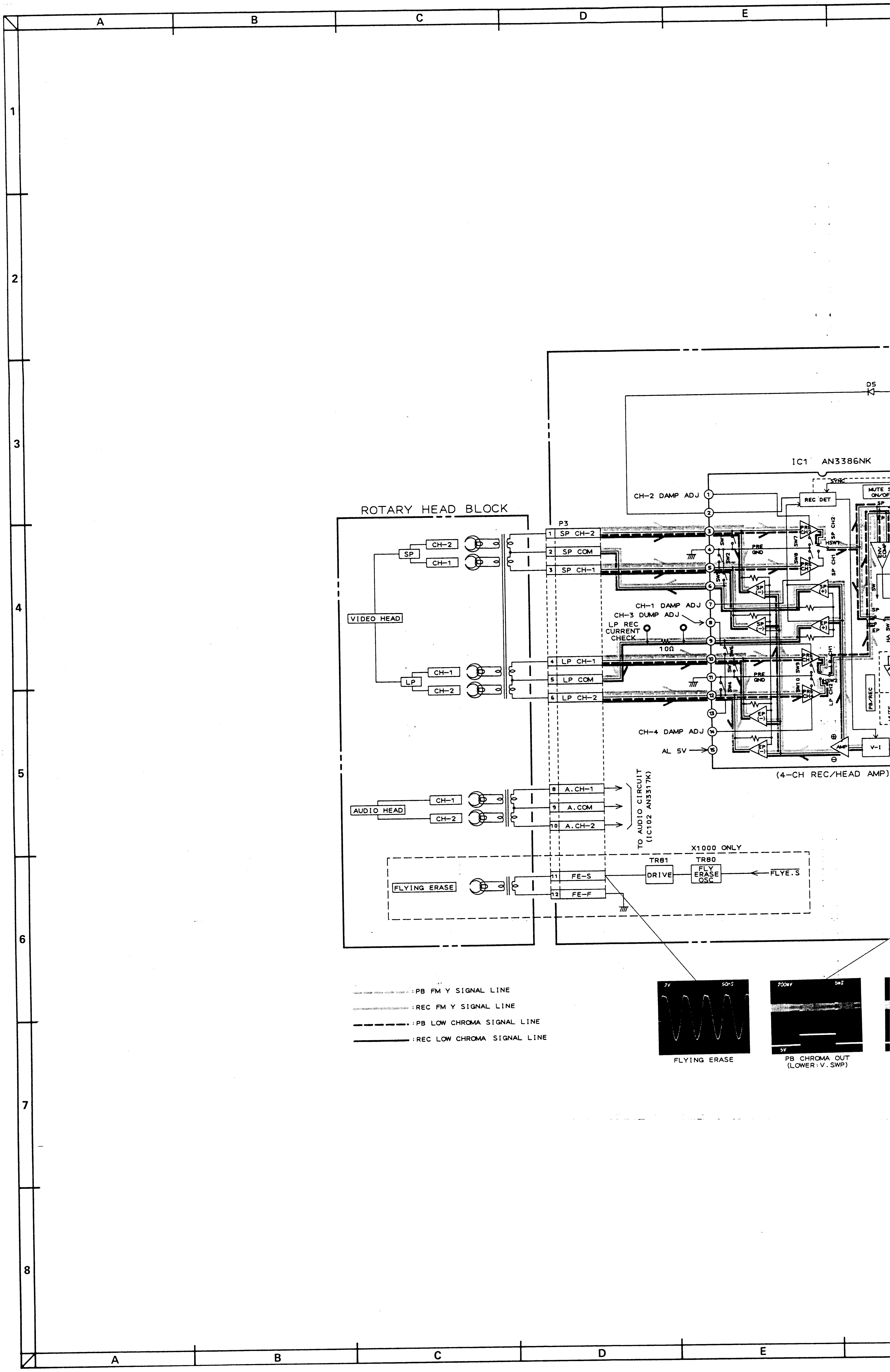
:PB Y SIGNAL LINE

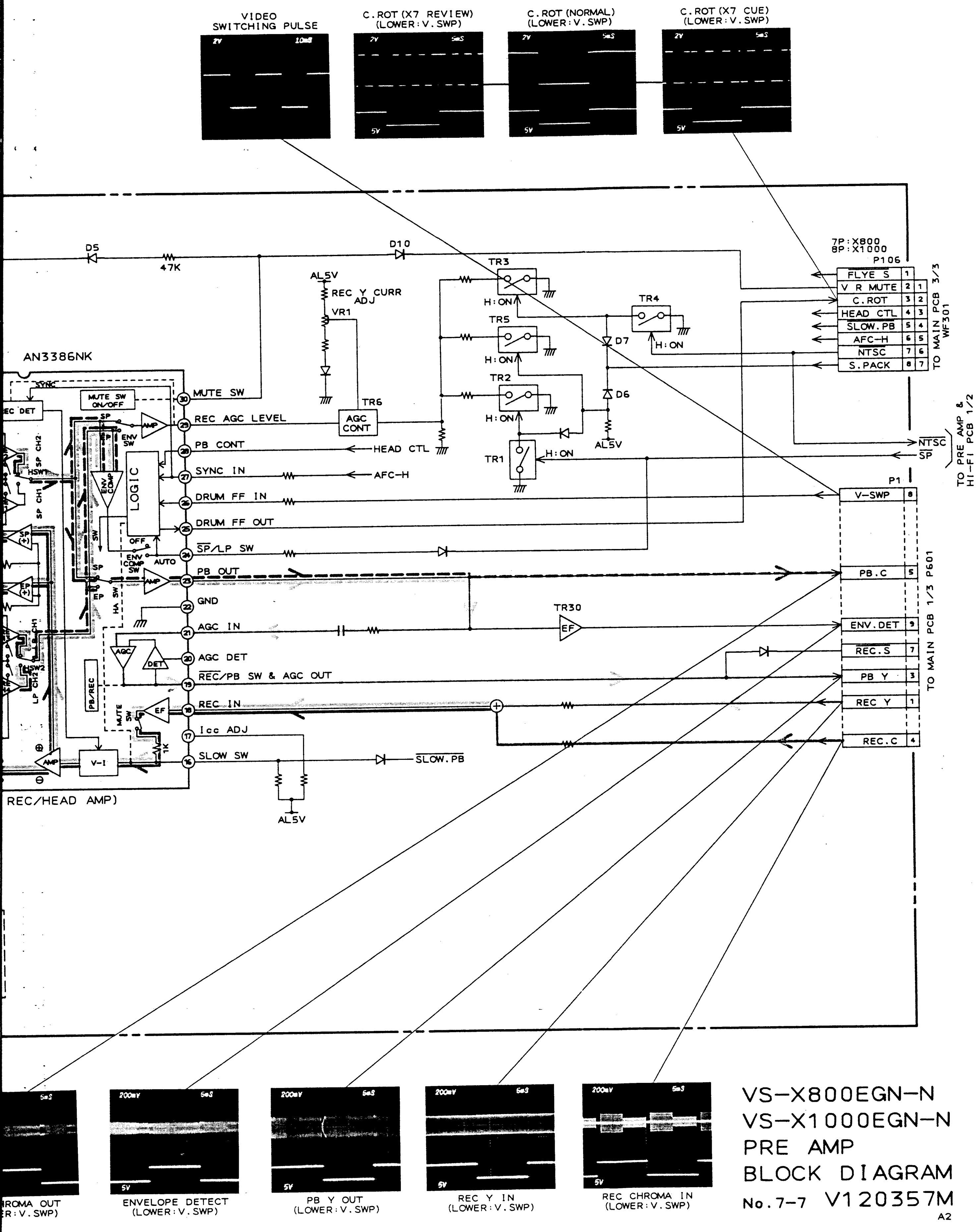
:REC Y SIGNAL LINE

:PB CHROMA SIGNAL LINE

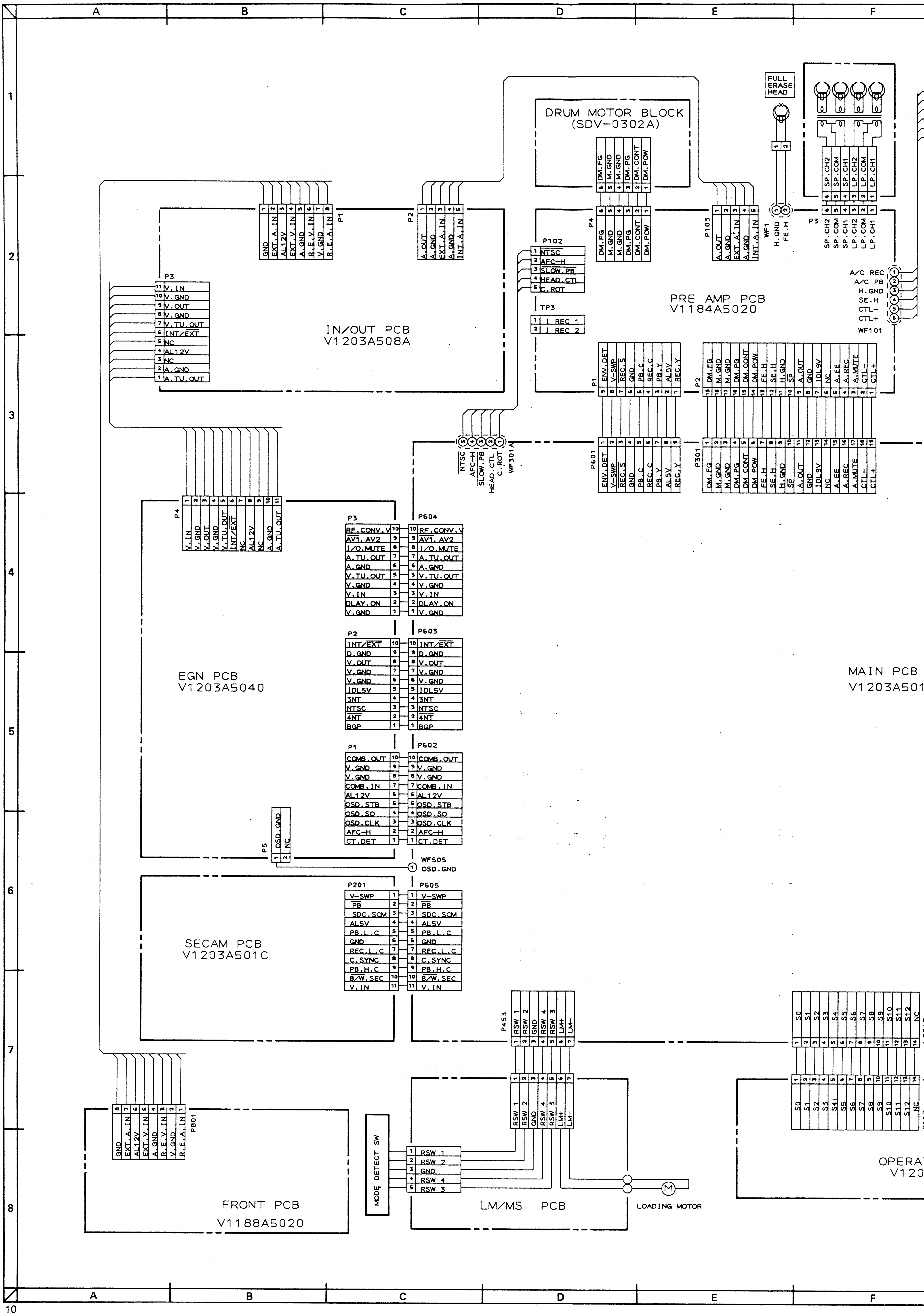
:REC CHROMA SIGNAL LINE

VS-X480EGN
PRE AMP
BLOCK DIAGRAM
No.7-6 V120356M
A2

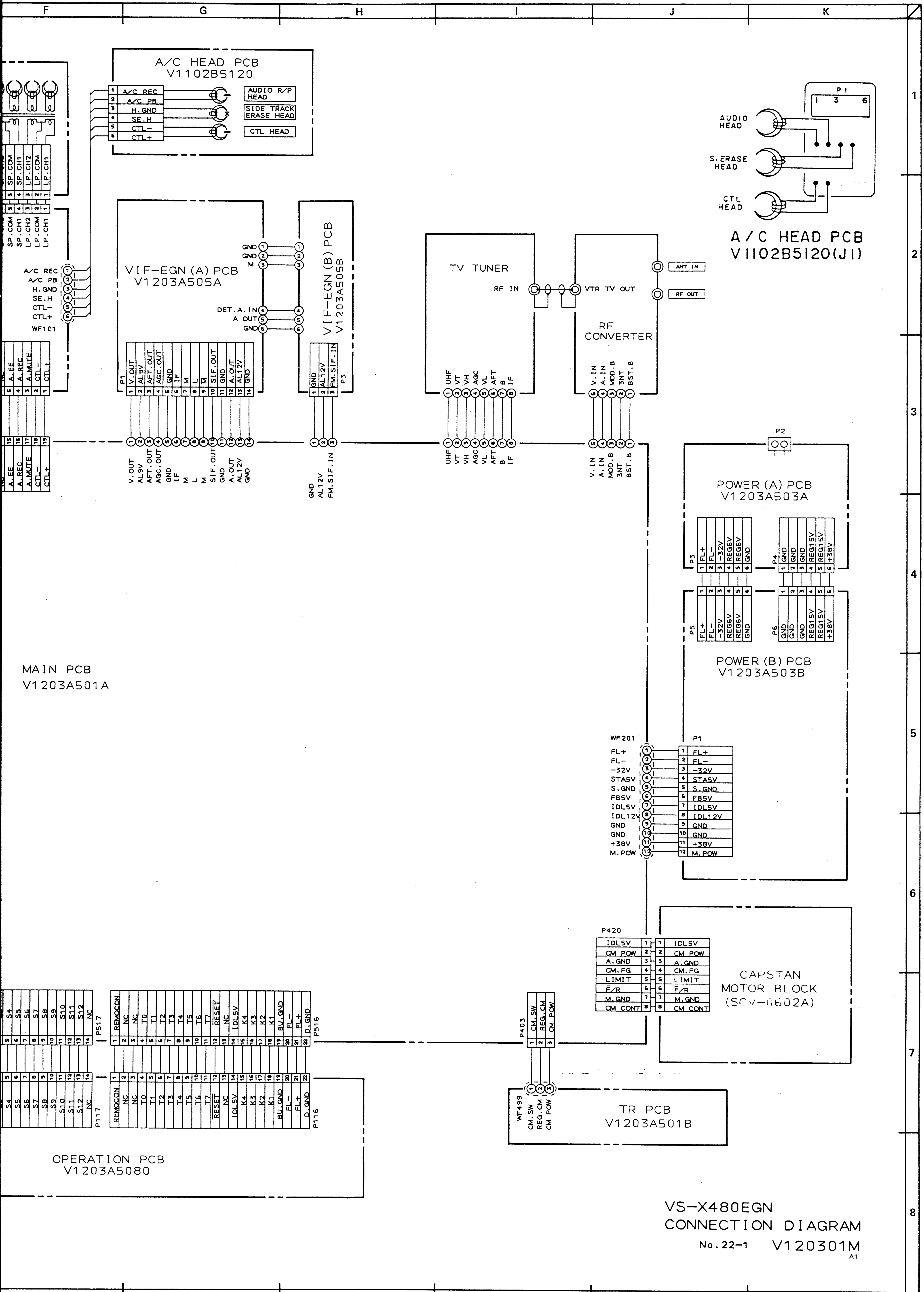

A
B
C
D
E
1
2
3
4
5
6
7
8
ROTARY HEAD BLOCK
VIDEO HEAD
SP
CH-2
CH-1
LP
CH-1
CH-2
AUDIO HEAD
CH-1
CH-2
FLYING ERASE
P3
1 SP CH-2
2 SP COM
3 SP CH-1
4 LP CH-1
5 LP COM
6 LP CH-2
8 A.CH-1
9 A.COM
10 A.CH-2
11 FE-S
12 FE-F
TO AUDIO CIRCUIT (IC102 AN3317K)
X1000 ONLY
TR81
DRIVE
TR80
FLY ERASE OSC
FLYE.S
D5
IC1 AN3386NK
CH-2 DAMP ADJ
CH-1 DAMP ADJ
CH-3 DUMP ADJ
LP REC CURRENT CHECK
10Ω
CH-4 DAMP ADJ
AL 5V
SYNC
REC DET
MUTE ON/OF
PRE CH2
PRE CH1
PRE CH3
PRE CH4
PRE GND
SW1
SW2
SW3
SW4
SW5
SW6
SW7
SW8
SW9
SW10
SP CH2
SP CH1
LP CH1
LP CH2
HSW1
HSW2
SP (−)
SP (+)
EP (−)
EP (+)
ENV COMP
SW
SP
EP
HA SW
PB/REC
AMP
V-I
(4-CH REC/HEAD AMP)
2V
50mS
200mV
5mS
5V
FLYING ERASE
PB CHROMA OUT (LOWER:V.SWP)
:PB FM Y SIGNAL LINE
:REC FM Y SIGNAL LINE
:PB LOW CHROMA SIGNAL LINE
:REC LOW CHROMA SIGNAL LINE


VIDEO SWITCHING PULSE
C.ROT (X7 REVIEW) (LOWER:V.SWP)
C.ROT (NORMAL) (LOWER:V.SWP)
C.ROT (X7 CUE) (LOWER:V.SWP)
D5
47K
D10
AL5V
REC Y CURR ADJ
VR1
TR3
H:ON
TR4
H:ON
TR5
H:ON
D7
TR2
H:ON
D6
TR1
H:ON
AL5V
TR6
AGC CONT
AN3386NK
MUTE SW ON/OFF
REC DET
AMP
ENV SW
LOGIC
ENV COMP
AUTO
OFF
MUTE SW
REC AGC LEVEL
PB CONT
HEAD CTL
SYNC IN
AFC-H
DRUM FF IN
DRUM FF OUT
SP/LP SW
PB OUT
GND
AGC IN
AGC DET
REC/PB SW & AGC OUT
REC IN
Icc ADJ
SLOW SW
SLOW.PB
AL5V
V-I
AMP
EF
AGC
DET
PB/REC
REC/HEAD AMP)
TR30
EF
7P:X800
8P:X1000
P106
FLYE S
V R MUTE
C.ROT
HEAD CTL
SLOW.PB
AFC-H
NTSC
S.PACK
TO MAIN PCB 3/3 WF301
NTSC
SP
TO PRE AMP & HI-FI PCB 1/2
P1
V-SWP
PB.C
ENV.DET
REC.S
PB Y
REC Y
REC.C
TO MAIN PCB 1/3 P601
CHROMA OUT (LOWER:V.SWP)
ENVELOPE DETECT (LOWER:V.SWP)
PB Y OUT (LOWER:V.SWP)
REC Y IN (LOWER:V.SWP)
REC CHROMA IN (LOWER:V.SWP)

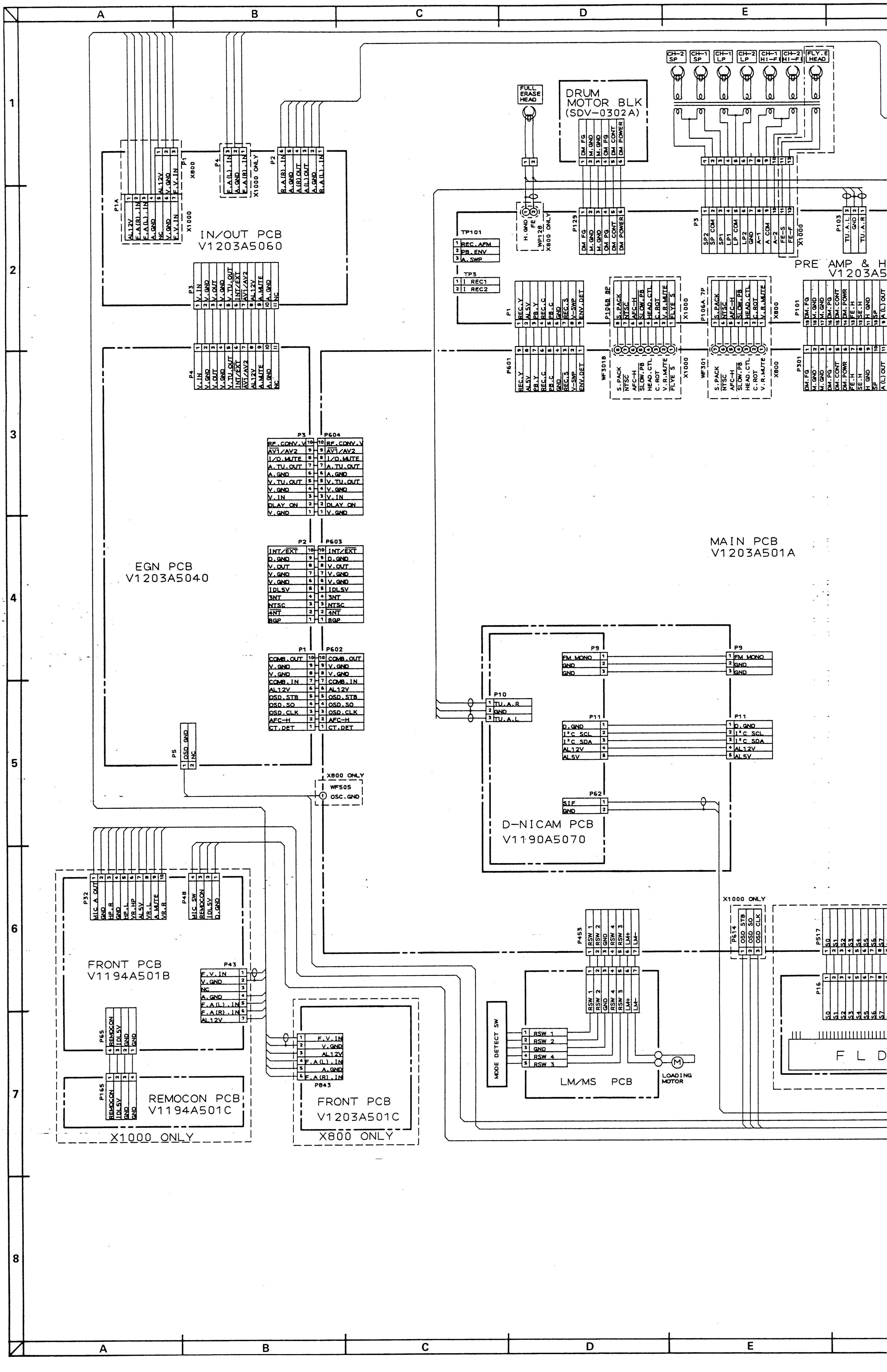
VS-X800EGN-N
VS-X1000EGN-N
PRE AMP
BLOCK DIAGRAM
No.7-7 V120357M
A2

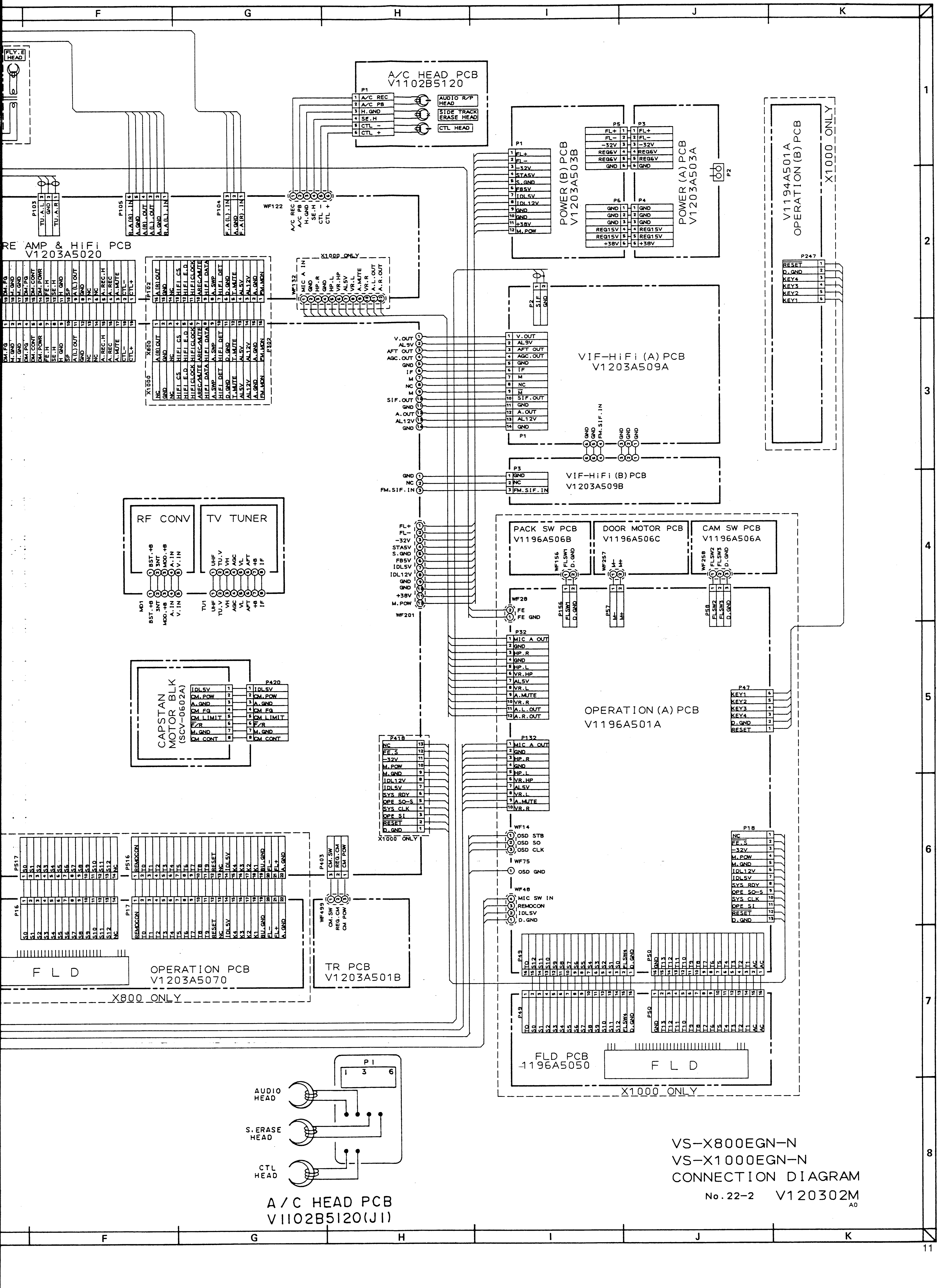


DRUM MOTOR BLOCK
(SDV-0302A)
DM.FG
M.GND
M.GND
DM.PG
DM.CONT
DM.POW
FULL ERASE HEAD
H.GND
FE.H
WF1
SP.CH2
SP.COM
SP.CH1
LP.CH2
LP.COM
LP.CH1
P1
P2
P3
P4
P102
P103
GND
EXT.A.IN
AL12V
EXT.V.IN
A.GND
R.E.V.IN
V.GND
R.E.A.IN
A.OUT
INT.A.IN
NTSC
AFC-H
SLOW.PB
HEAD.CTL
C.ROT
TP3
I REC 1
I REC 2
PRE AMP PCB
V1184A5020
A/C REC
A/C PB
SE.H
CTL-
CTL+
WF101
IN/OUT PCB
V1203A508A
V.IN
V.OUT
V.TU.OUT
INT/EXT
NC
A.TU.OUT
ENV.DET
V-SWP
REC.S
PB.C
REC.C
PB.Y
AL5V
REC.Y
FE.H
SP
IDL9V
A.FE
A.REC
A.MUTE
P601
P301
WF301A
EGN PCB
V1203A5040
P604
P603
P602
P605
RF.CONV.V
AV1.AV2
I/O.MUTE
DLAY.ON
D.GND
IDL5V
3NT
4NT
BGP
COMB.OUT
COMB.IN
OSD.STB
OSD.SO
OSD.CLK
CT.DET
P5
OSD.GND
WF505
MAIN PCB
V1203A501
SECAM PCB
V1203A501C
P201
PB
SDC.SCM
PB.L.C
REC.L.C
C.SYNC
PB.H.C
B/W.SEC
P453
RSW 1
RSW 2
RSW 4
RSW 3
LM+
LM-
S0
S1
S2
S3
S4
S5
S6
S7
S8
S9
S10
S11
S12
P801
FRONT PCB
V1188A5020
MODE DETECT SW
LM/MS PCB
LOADING MOTOR
OPERA
V120
A
B
C
D
E
F
1
2
3
4
5
6
7
8

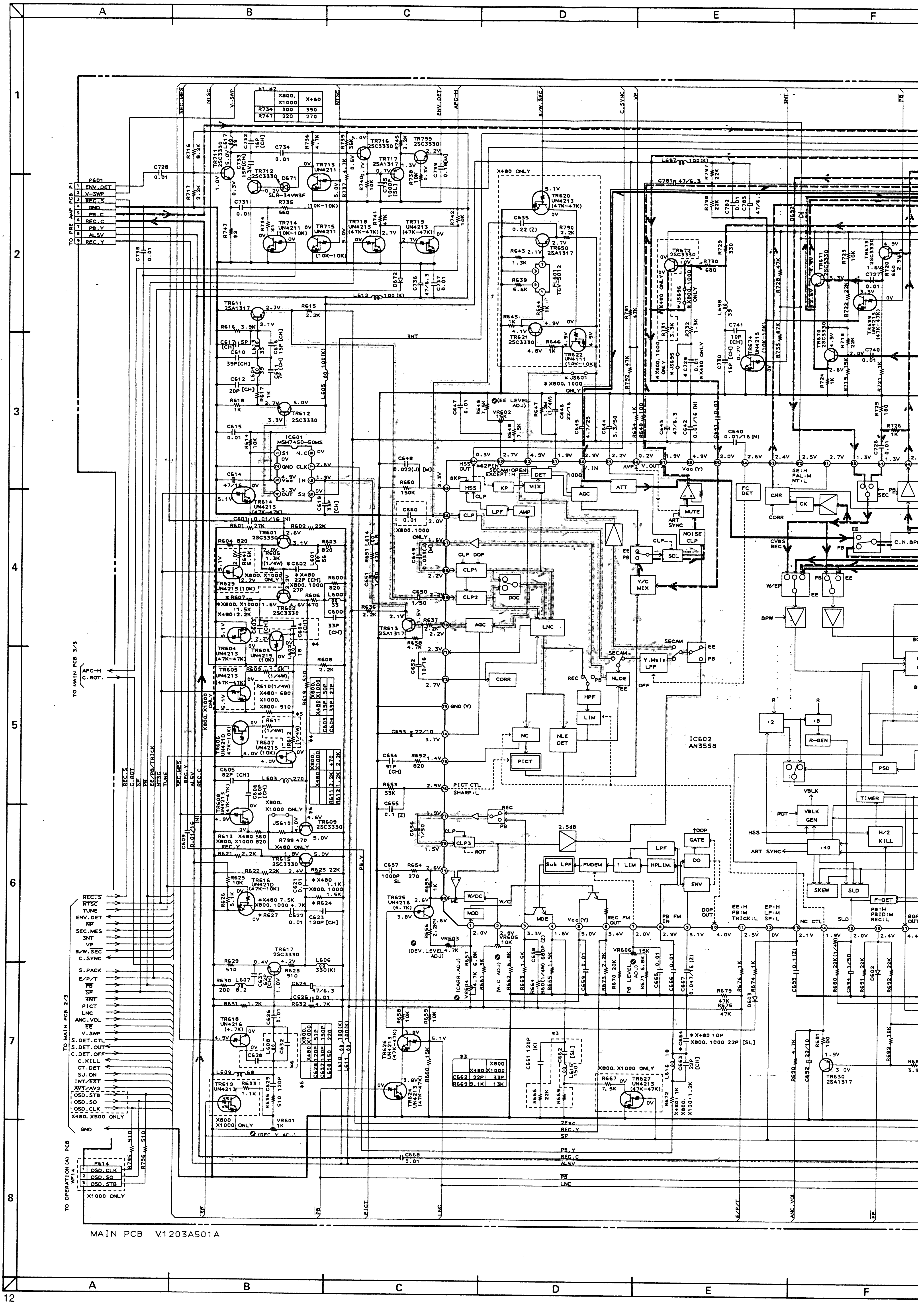

F
G
H
I
J
K
1
2
3
4
5
6
7
8
A/C HEAD PCB
V1102B5120
A/C REC
A/C PB
H.GND
SE.H
CTL−
CTL+
AUDIO R/P HEAD
SIDE TRACK ERASE HEAD
CTL HEAD
SP.COM
SP.CH1
SP.CH2
LP.COM
LP.CH1
WF101
A.EE
A.REC
A.MUTE
VIF-EGN (A) PCB
V1203A505A
GND
GND
M
DET.A.IN
A OUT
GND
P1
V.OUT
AL9V
AFT.OUT
AGC.OUT
GND
IF
M
L
M
SIF.OUT
GND
A.OUT
AL12V
GND
VIF-EGN (B) PCB
V1203A505B
AL12V
FM.SIF.IN
P3
TV TUNER
RF IN
UHF
VT
VH
AGC
VL
AFT
B
IF
VTR TV OUT
ANT IN
RF OUT
RF CONVERTER
V.IN
A.IN
MOD.B
3NT
BST.B
AUDIO HEAD
S.ERASE HEAD
CTL HEAD
P1
A/C HEAD PCB
V1102B5120(J1)
P2
POWER (A) PCB
V1203A503A
P3
FL+
FL−
−32V
REG6V
P4
REG15V
+38V
P5
P6
POWER (B) PCB
V1203A503B
MAIN PCB
V1203A501A
WF201
STA5V
S.GND
FB5V
IDL5V
IDL12V
M.POW
P420
CM POW
A.GND
CM.FG
LIMIT
F/R
M.GND
CM CONT
CAPSTAN MOTOR BLOCK
(SCV-0602A)
P403
CM.SW
REG.CM
CM POW
WF499
TR PCB
V1203A501B
S4
S5
S6
S7
S8
S9
S10
S11
S12
NC
P517
REMOCON
T0
T1
T2
T3
T4
T5
T6
T7
RESET
K4
K3
K2
K1
BU.GND
D.GND
P516
P117
P116
OPERATION PCB
V1203A5080

VS-X480EGN
CONNECTION DIAGRAM
No.22-1 V120301M
A1

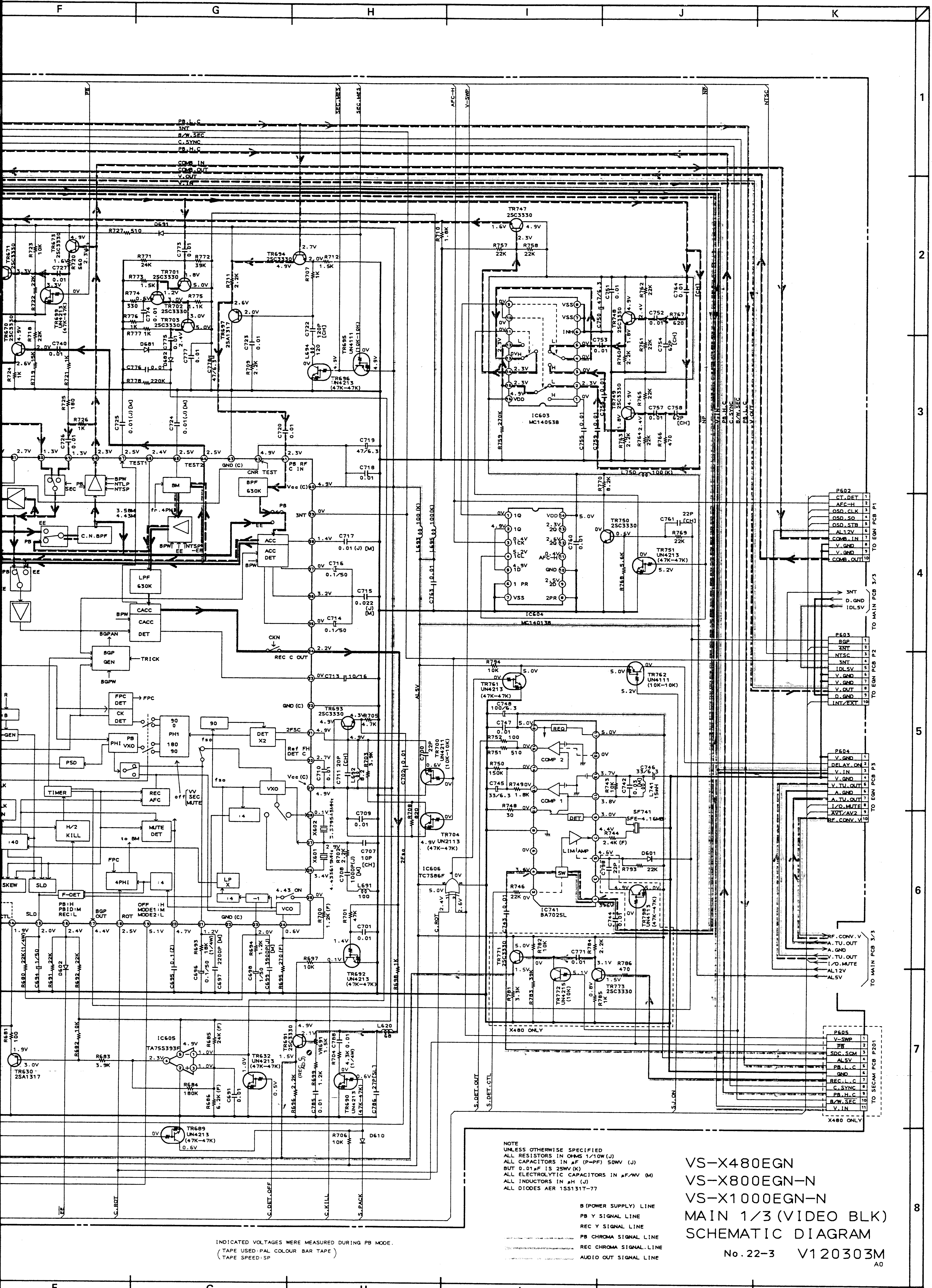

A
B
C
D
E
1
2
3
4
5
6
7
8
IN/OUT PCB
V1203A5060
P1A
X1000
P1
X800
P4
X1000 ONLY
P2
P3
P4
EGN PCB
V1203A5040
P5
OSD GND
NC
P3
P604
RF.CONV.V
AV1/AV2
I/O.MUTE
A.TU.OUT
A.GND
V.TU.OUT
V.GND
V.IN
DLAY ON
P2
P603
INT/EXT
D.GND
V.OUT
IDL5V
3NT
NTSC
4NT
BGP
P1
P602
COMB.OUT
COMB.IN
AL12V
OSD.STB
OSD.SO
OSD.CLK
AFC-H
CT.DET
X800 ONLY
WF505
OSC.GND
FULL ERASE HEAD
DRUM MOTOR BLK
(SDV-0302A)
DM FG
M.GND
DM PG
DM CONT
DM POWER
H.GND
FE
WP128
X800 ONLY
P129
TP101
REC.AFM
PB.ENV
A.SWP
TP3
REC1
REC2
P1
P601
REC.Y
AL5V
PB.Y
REC.C
PB.C
GND
REC.S
V-SWP
ENV.DET
P106B 8P
WF301B
X1000
P106A 7P
WF301
X800
S.PACK
NTSC
AFC-H
SLOW.PB
HEAD.CTL
C.ROT
V.R.MUTE
FLYE S
CH-2 SP
CH-1 SP
CH-1 LP
CH-2 LP
CH-1 HI-FI
CH-2 HI-FI
FLY.E HEAD
P3
SP2
SP COM
SP1
LP1
LP COM
LP2
A-1
A COM
A-2
FE-S
FE-F
X1000
P103
TU.A.L
TU.A.R
PRE AMP & H
V1203A5
P101
P301
DM.FG
M.GND
M.PG
DM.PG
DM.CONT
DM.POWR
FE.H
SE.H
H GND
SP
A(L)OUT
MAIN PCB
V1203A501A
P10
TU.A.R
GND
TU.A.L
P9
FM MONO
GND
P11
D.GND
I²C SCL
I²C SDA
AL12V
AL5V
P62
SIF
GND
D-NICAM PCB
V1190A5070
FRONT PCB
V1194A501B
P32
MIC A OUT
GND
HP.R
HP.L
VR.HP
AL5V
VR.L
A.MUTE
VR.R
P48
MIC SW
REMOCON
IDL5V
D.GND
P43
F.V.IN
V.GND
NC
A.GND
F.A(L).IN
F.A(R).IN
AL12V
P65
P165
REMOCON
IDL5V
GND
REMOCON PCB
V1194A501C
X1000 ONLY
P843
F.V.IN
V.GND
AL12V
F.A(L).IN
A.GND
F.A(R).IN
FRONT PCB
V1203A501C
X800 ONLY
P453
RSW 1
RSW 2
GND
RSW 4
RSW 3
LM+
LM-
MODE DETECT SW
LM/MS PCB
LOADING MOTOR
M
X1000 ONLY
P614
OSD STB
OSD SO
OSD CLK
P517
P16
S0
S1
S2
S3
S4
S5
S6
S7
F L D


A/C HEAD PCB V1102B5120
AUDIO R/P HEAD
SIDE TRACK ERASE HEAD
CTL HEAD
POWER (B) PCB V1203A503B
POWER (A) PCB V1203A503A
V1194A501A OPERATION (B) PCB
X1000 ONLY
RE AMP & HiFi PCB V1203A5020
VIF-HiFi (A) PCB V1203A509A
VIF-HiFi (B) PCB V1203A509B
RF CONV
TV TUNER
PACK SW PCB V1196A506B
DOOR MOTOR PCB V1196A506C
CAM SW PCB V1196A506A
CAPSTAN MOTOR BLK (SCV-0602A)
OPERATION (A) PCB V1196A501A
OPERATION PCB V1203A5070
X800 ONLY
TR PCB V1203A501B
FLD PCB 1196A5050
F L D
X1000 ONLY
AUDIO HEAD
S.ERASE HEAD
CTL HEAD
A/C HEAD PCB V1102B5120(J1)
F
G
H
I
J
K
1
2
3
4
5
6
7
8

VS-X800EGN-N
VS-X1000EGN-N
CONNECTION DIAGRAM
No.22-2 V120302M
A0


A
B
C
D
E
F
1
2
3
4
5
6
7
8
TO PRE AMP PCB P1
P601
ENV.DET
V-SWP
REC.S
GND
PB.C
REC.C
PB.Y
AL5V
REC.Y
X800, X1000
X480
R734
R747
300
390
220
270
TR711 2SC3330
TR712 2SC3330
TR713 UN4211
TR714 UN4211
TR715 UN4211
TR716 2SC3330
TR717 2SA1317
TR718 UN4213
TR719 UN4213
TR799 2SC3330
D671 SLR-34VW3F
X480 ONLY
TR620 UN4213 (47K-47K)
TR650 2SA1317
TR621 2SC3330
TR622 UN4111 (10K-10K)
FL601 TCV-5012
EE LEVEL ADJ
VR602
TR611 2SA1317
TR612 2SC3330
IC601 MSM7450-50MS
TR614 UN4213 (47K-47K)
TR601 2SC3330
TR602 2SC3330
TR629 UN4215 (10K)
TR613 2SA1317
TR603 UN4215 (10K)
TR604 UN4213 (47K-47K)
TR605 UN4213 (47K-47K)
TR606 UN4210 (47K-10K)
TR607 UN4215 (10K)
TR608 UN4210 (47K-47K)
TR609 2SC3330
TR615 2SC3330
TR616 UN4210 (47K-10K)
TR617 2SC3330
TR618 UN4216 (4.7K)
TR619 UN4213
TR625 UN4216 (4.7K)
TR626 UN4213 (47K-47K)
TR624 UN4213 (47K-47K)
TR627 UN4213 (47K-47K)
TR630 2SA1317
TR671 2SC3330
TR672 2SC3330
TR673 2SC3330
TR674 UN4211 (10K-10K)
TR670 2SC3330
TR639 UN4213 (47K-47K)
VR601 (REC Y ADJ)
VR603 (DEV. LEVEL ADJ)
VR604 (CARR ADJ)
VR605 (W.C ADJ)
VR606 PB LEVEL ADJ
IC602 AN3558
HSS
KP
MIX
DET
CLP
LPF
AMP
AGC
ATT
MUTE
ART SYNC
NOISE CLP
SCL
Y/C MIX
FC DET
CNR
CK
CORR
C.N.BPF
CVBS REC
W/EP
BPW
EE
PB
SEC
CLP1
CLP2
DOC
LNC
CORR
Y.Main LPF
SECAM
NLDE
HPF
LIM
NC
NLE DET
PICT
CLP3
2.5dB
GATE
DOP
ENV
LPF
HPLIM
1 LIM
FMDEM
Sub LPF
W/DC
MOD
MDE
REC FM OUT
PB FM IN
DOP OUT
EE:H PB:M TRICK:L
EP:H LP:M SP:L
NC CTL
SLD
PB:H PBID:M REC:L
SE:H PAL:M NT:L
SECAM:OPEN EXCEPT:H
*62PIN
÷2
÷8
R-GEN
PSD
TIMER
VBLK
VBLK GEN
ROT
HSS
ART SYNC
÷40
H/2 KILL
SKEW
SLD
F-DET
PICT CTL SHARP:L
GND (Y)
Vcc (Y)
*3
X480
X1000
C662
22P
33P
R669
9.1K
13K
TO MAIN PCB 3/3
AFC-H
C.ROT.
TO MAIN PCB 2/3
REC.S
NTSC
TUNE
ENV.DET
NP
SEC.MES
3NT
VP
B/W.SEC
C.SYNC
S.PACK
E/P/T
PB
SP
4NT
PICT
LNC
ANC.VOL
EE
V.SWP
S.DET.CTL
S.DET.OUT
C.DET.OFF
C.KILL
CT.DET
SJ.ON
INT/EXT
AVT/AV2
OSD.STB
OSD.SO
OSD.CLK
X480, X800 ONLY
GND
TO OPERATION(A) PCB WF14
P614
OSD.CLK
OSD.SO
OSD.STB
X1000 ONLY
2fsc
REC.Y
SF
PB.Y
REC.C
AL5V
PB
LNC
SP
PB
PICT
LNC
E/P/T
ANC.VOL
EE

MAIN PCB V1203A501A


IC603 MC140538
IC604 MC140138
IC605 TA75S393F
IC606 TC7S86F
IC741 BA7025L
P602 TO EGN PCB P1
CT.DET
AFC-H
OSD.CLK
OSD.SO
OSD.STB
AL12V
COMB.IN
V.GND
V.GND
COMB.OUT
3NT
D.GND
IDL5V
TO MAIN PCB 3/3
P603 TO EGN PCB P2
BGP
3NT
NTSC
3NT
IDL5V
V.GND
V.GND
V.OUT
D.GND
INT/EXT
P604 TO EGN PCB P3
V.GND
DELAY.ON
V.IN
V.GND
V.TU.OUT
A.GND
A.TU.OUT
I/O.MUTE
AVT/AV2
RF.CONV.V
RF.CONV.V
A.TU.OUT
A.GND
V.TU.OUT
I/O.MUTE
AL12V
AL5V
TO MAIN PCB 3/3
P605 TO SECAM PCB P201
V.SWP
PB
SDC.SCM
AL5V
PB.L.C
GND
REC.L.C
C.SYNC
PB.H.C
B/W.SEC
V.IN
X480 ONLY
X480 ONLY
PB.L.C
3NT
B/W.SEC
C.SYNC
PB.H.C
COMB.IN
COMB.OUT
V.OUT
V.IN
SEC.MES
SEC.MES
AFC-H
V.SWP
NTSC
TR747 2SC3330
TR748 2SC3330
TR749 2SC3330
TR750 2SC3330
TR751 UN4213
TR761 UN4213
TR762 UN4111
TR771 2SC3330
TR772 UN4215
TR773 2SC3330
TR798 UN4113
TR694 2SC3330
TR695 UN4111
TR696 UN4213
TR697 2SA1317
TR701 2SC3330
TR702 2SC3330
TR703 2SC3330
TR693 2SC3330
TR700 UN4211
TR704 UN2113
TR692 UN4213
TR691 2SC3330
TR690 UN4213
TR632 UN4213
TR630 2SA1317
TR689 UN4213
TR670 2SC3330
TR671 2SC3330
TR673 2SC3330
TR699
SF741 SFE-4.16MB
L741 15mH
X601 4.43361MHz
X602 3.579545MHz
BPF 630K
LPF 630K
CACC DET
ACC DET
BGP GEN
FPC DET
CK DET
PH1 VXO
PSD
TIMER
REC AFC
H/2 KILL
MUTE DET
4PHI
SKEW
SLD
F-DET
DET X2
VXO
VCO
LP X
COMP 1
COMP 2
DET
LIM AMP
SW
BM
C.N.BPF
CNR TEST
REC C OUT
GND (C)
Vcc (C)
3NT
TEST1
TEST2
TRICK
BPW
BGPAN
BGPW
S.DET.OUT
S.DET.CTL
S.J.ON
C.ROT
C.DET.OFF
C.KILL
S.PACK
EE
F
G
H
I
J
K
1
2
3
4
5
6
7
8

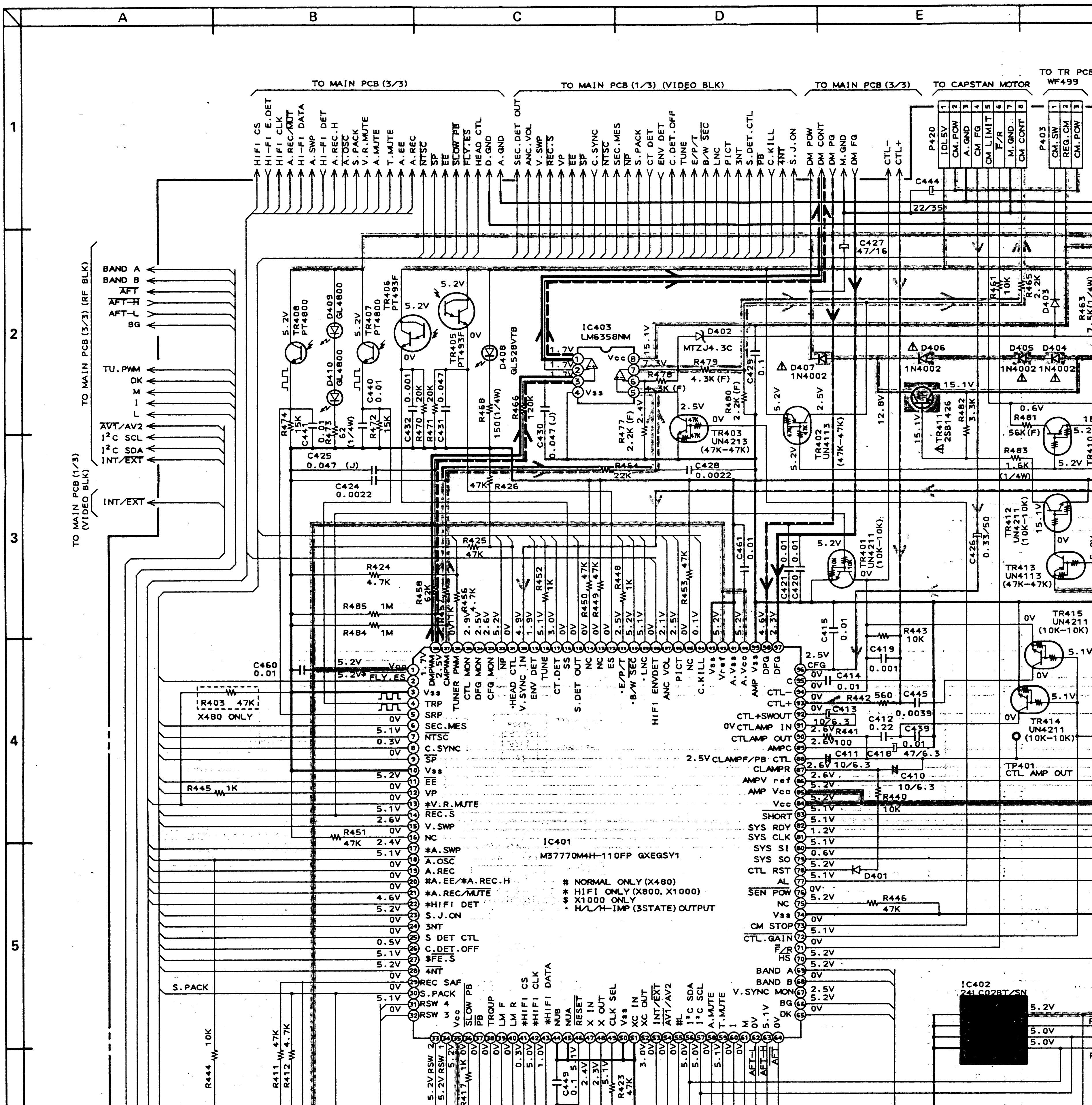
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/10W (J)
ALL CAPACITORS IN μF (P=PF) 50WV (J)
BUT 0.01μF IS 25WV (K)
ALL ELECTROLYTIC CAPACITORS IN μF/WV (M)
ALL INDUCTORS IN μH (J)
ALL DIODES AER 1SS131T-77

B (POWER SUPPLY) LINE
PB Y SIGNAL LINE
REC Y SIGNAL LINE
PB CHROMA SIGNAL LINE
REC CHROMA SIGNAL.LINE
AUDIO OUT SIGNAL LINE

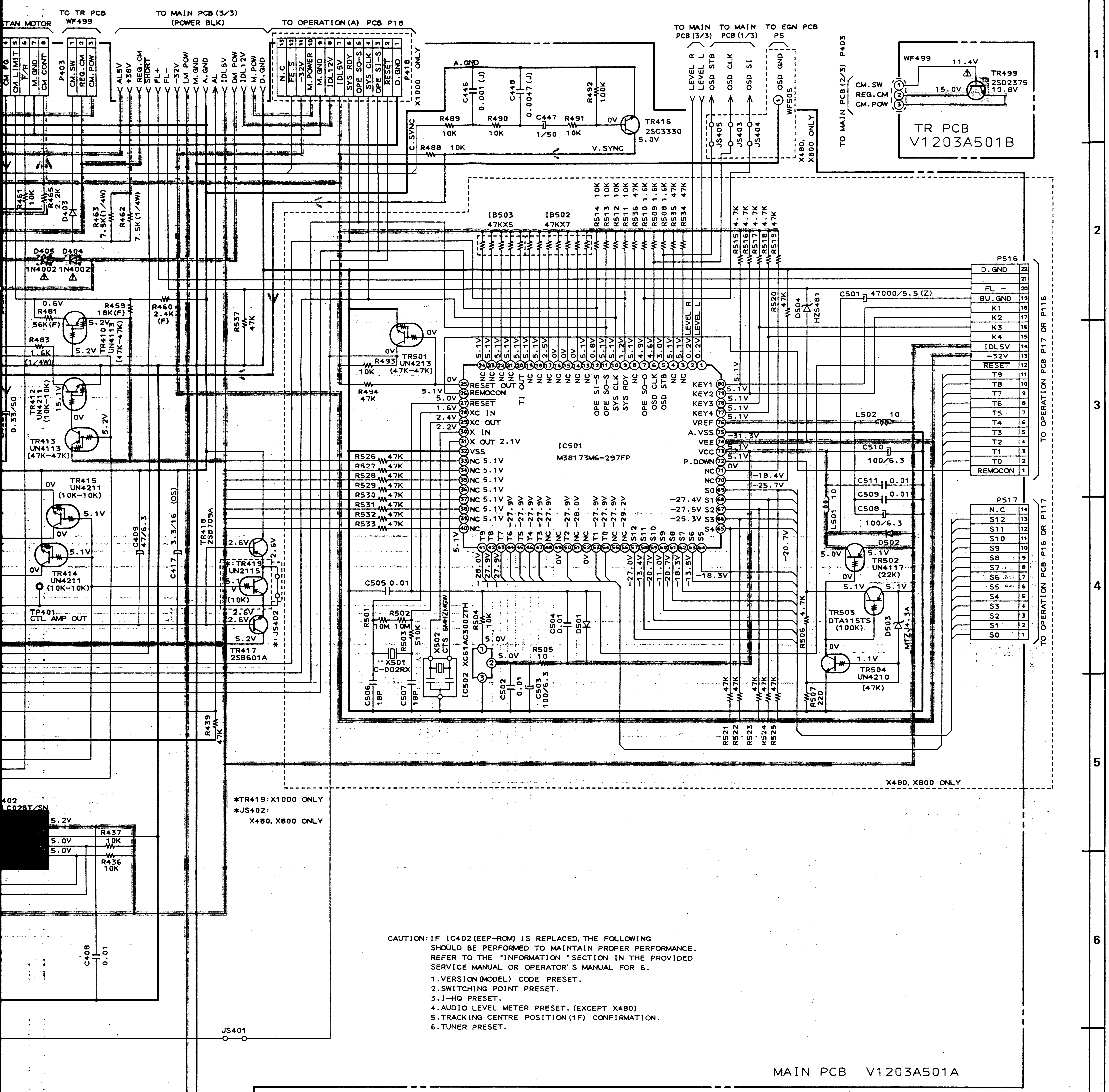
INDICATED VOLTAGES WERE MEASURED DURING PB MODE.
(TAPE USED: PAL COLOUR BAR TAPE
TAPE SPEED: SP)

VS-X480EGN
VS-X800EGN-N
VS-X1000EGN-N
MAIN 1/3 (VIDEO BLK)
SCHEMATIC DIAGRAM

No.22-3 V120303M
A0



TO MAIN PCB (3/3)
TO MAIN PCB (1/3) (VIDEO BLK)
TO MAIN PCB (3/3)
TO CAPSTAN MOTOR
TO TR PCB
WF499
HIFI CS
HI-FI E.DET
HIFI CLK
A.REC/MUT
HI-FI DATA
A.SWP
HI-FI DET
A.REC.H
A.OSC
S.PACK
V.R.MUTE
A.MUTE
T.MUTE
A.EE
A.REC
NTSC
SP
EE
SLOW PB
FLY.ES
HEAD CTL
D.GND
A.GND
SEC.DET OUT
ANC.VOL
V.SWP
REC.S
VP
EE
SP
C.SYNC
NTSC
SEC.MES
NP
S.PACK
CT DET
ENV DET
C.DET.OFF
TUNE
E/P/T
B/W SEC
LNC
PICT
3NT
S.DET.CTL
PB
C.KILL
4NT
S.J.ON
DM POW
DM CONT
DM PG
M.GND
DM FG
CTL-
CTL+
P420
IDL5V
CM.POW
A.GND
CM FG
CM LIMIT
F/R
M.GND.
CM CONT
P403
CM.SW
REG.CM
CM.POW
C444
22/35
C427
47/16
TO MAIN PCB (3/3) (RF BLK)
BAND A
BAND B
AFT
AFT-H
AFT-L
BG
TU.PWM
DK
M
I
L
AVT/AV2
I²C SCL
I²C SDA
INT/EXT
TO MAIN PCB (1/3) (VIDEO BLK)
INT/EXT
TR408 PT4800
D409 GL4800
TR407 PT4800
TR406 PT493F
TR405 PT493F
D410 GL4800
D408 GL528VTB
IC403 LM6358NM
D402 MTZJ4.3C
R479 4.3K (F)
R478 3K (F)
D407 1N4002
D406 1N4002
D405 1N4002
D404 1N4002
TR411 2SB1126
R482 3.3K
R481 56K (F)
R483 1.6K (1/4W)
TR403 UN4213 (47K-47K)
TR402 UN4113 (47K-47K)
R480 2.2K (F)
R477 2.2K (F)
R464 22K
C428 0.0022
C430 0.047 (J)
R466 120K
R468 150 (1/4W)
C425 0.047 (J)
C424 0.0022
R474 15K
C441 0.01
R473 62 (1/4W)
R472 15K
C440 0.01
C432 0.001
R470 20K
R471 20K
C431 0.047
R426 47K
R425 47K
R424 4.7K
R485 1M
R484 1M
R458 62K
R456 4.7K
R452 1K
R450 4.7K
R449 4.7K
R448 1K
R453 4.7K
C461 0.01
C421 0.01
C420 0.01
TR401 UN421 (10K-10K)
C426 0.33/50
TR412 UN421 (10K-10K)
TR413 UN4113 (47K-47K)
TR415 UN4211 (10K-10K)
TR414 UN4211 (10K-10K)
TP401 CTL AMP OUT
C415 0.01
R443 10K
C419 0.001
C414 0.01
R442 560
C445 0.0039
C413 10/6.3
R441 100
C412 0.22
C439 0.01
C411
C418 47/6.3
C410 10/6.3
R440 10K
C460 0.01
R403 47K
X480 ONLY
R445 1K
R451 47K
IC401
M37770M4H-110FP GXEGSY1
# NORMAL ONLY (X480)
* HIFI ONLY (X800, X1000)
$ X1000 ONLY
• H/L/H-IMP (3STATE) OUTPUT
DMPWM
CMPWM
TUNER PWM
CTL MON
DFG MON
CFG MON
NP
•HEAD CTL
V.SYNC IN
ENV DET
TUNE
CT.DET
SS
S.DET OUT
NC
NC
ES
•E/P/T
•B/W SEC
•LNC
HIFI ENVDET
ANC VOL
PICT
NC
C.KILL
Vss
Vref
A.Vcc
A.Vss
AMP Vss
DPG
DFG
Vcc
FLY.ES
Vss
TRP
SRP
SEC.MES
NTSC
C.SYNC
SP
Vss
EE
VP
*V.R.MUTE
REC.S
V.SWP
NC
*A.SWP
A.OSC
A.REC
#A.EE/*A.REC.H
*A.REC/MUTE
*HIFI DET
S.J.ON
3NT
S DET CTL
C.DET.OFF
$FE.S
4NT
REC SAF
S.PACK
RSW 4
RSW 3
CFG
C
CTL-
CTL+
CTL+SWOUT
CTLAMP IN
CTLAMP OUT
AMPC
CLAMPF/PB CTL
CLAMPR
AMPV ref
AMP Vcc
Vcc
SHORT
SYS RDY
SYS CLK
SYS SI
SYS SO
CTL RST
AL
SEN POW
NC
Vss
CM STOP
CTL.GAIN
F/R
HS
BAND A
BAND B
V.SYNC MON
BG
DK
D401
R446 47K
RSW 2
RSW 1
Vcc
SLOW PB
PB
TRQUP
LM F
LM R
*HIFI CS
*HIFI CLK
*HIFI DATA
NUB
NUA
RESET
X IN
X OUT
CLK SEL
Vss
XC IN
XC OUT
INT/EXT
AVT/AV2
#L
I²C SDA
I²C SCL
A.MUTE
T.MUTE
I
M
AFT-L
AFT-H
AFT
IC402
24LC02BT/SN
S.PACK
R444 10K
R411 47K
R412 4.7K
R417 1K
C449 0.1
R423 47K
R421 1M
R422 1K
X401 APS-1011A 16MHZ
C402 18P (CH)
C403 20P (CH)
R427 300
R428 300
R454 47K
R455 47K
R447 10K
C470 0.01
C423 0.001
C408
SW401 (REC SAFETY)
SW402 (S-VHS PACK)
R419 47K
R420 47K
IC404 LB1641
GND
LM +
P1
REF V
LM F
LM R
VCC1
VCC2
P2
LM -
C438 0.01
TRQUP
D411 MTZJ6.2C
TR409 2SA1317
R475 47K
R476 47K
C437 0.022
C436 0.01
X1000 ONLY
C434 1/50
C435 1/50
R413 47K
R414 47K
R415 47K
R416 47K
C401 0.01 (K)
P453
RSW 1
RSW 2
D.GND
RSW 4
RSW 3
LM+
LM-
TO LM/VS PCB
A
B
C
D
E
1
2
3
4
5
6
7
8


TO TR PCB WF499
TO MAIN PCB (3/3) (POWER BLK)
TO OPERATION (A) PCB P18
TO MAIN PCB (3/3)
TO MAIN PCB (1/3)
TO EGN PCB P5
TO MAIN PCB (2/3) P403
TR PCB V1203A501B
TR499 2SD2375
TR416 2SC3330
IC501 M38173M6-297FP
IC502 XC61AC3002TH
X501 C-002RX
X502 CTS 6MHZMGW
TR501 UN4213 (47K-47K)
TR502 UN4117 (22K)
TR503 DTA115TS (100K)
TR504 UN4210 (47K)
TR410 UN4113 (47K-47K)
TR412 UN4211 (10K-10K)
TR413 UN4113 (47K-47K)
TR414 UN4211 (10K-10K)
TR415 UN4211 (10K-10K)
TR417 2SB601A
TR418 2SB709A
TR419 UN2115
P516
P517
TO OPERATION PCB P17 OR P116
TO OPERATION PCB P16 OR P117
TP401 CTL AMP OUT
*TR419: X1000 ONLY
*JS402: X480, X800 ONLY
X480, X800 ONLY
X1000 ONLY
MAIN PCB V1203A501A

CAUTION: IF IC402 (EEP-ROM) IS REPLACED, THE FOLLOWING SHOULD BE PERFORMED TO MAINTAIN PROPER PERFORMANCE. REFER TO THE "INFORMATION" SECTION IN THE PROVIDED SERVICE MANUAL OR OPERATOR'S MANUAL FOR 6.

1. VERSION (MODEL) CODE PRESET.
2. SWITCHING POINT PRESET.
3. I-HQ PRESET.
4. AUDIO LEVEL METER PRESET. (EXCEPT X480)
5. TRACKING CENTRE POSITION (1F) CONFIRMATION.
6. TUNER PRESET.

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/10W OR 1/4W (J)
ALL CAPACITORS IN μF (P=PF) (J)
ALL ELECTROLYTIC CAPACITORS IN μF/WV (M)
ALL DIODES ARE 1SS131
ALL INDUCTORS IN μH (K)

WARNING: ⚠ AND ▨ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

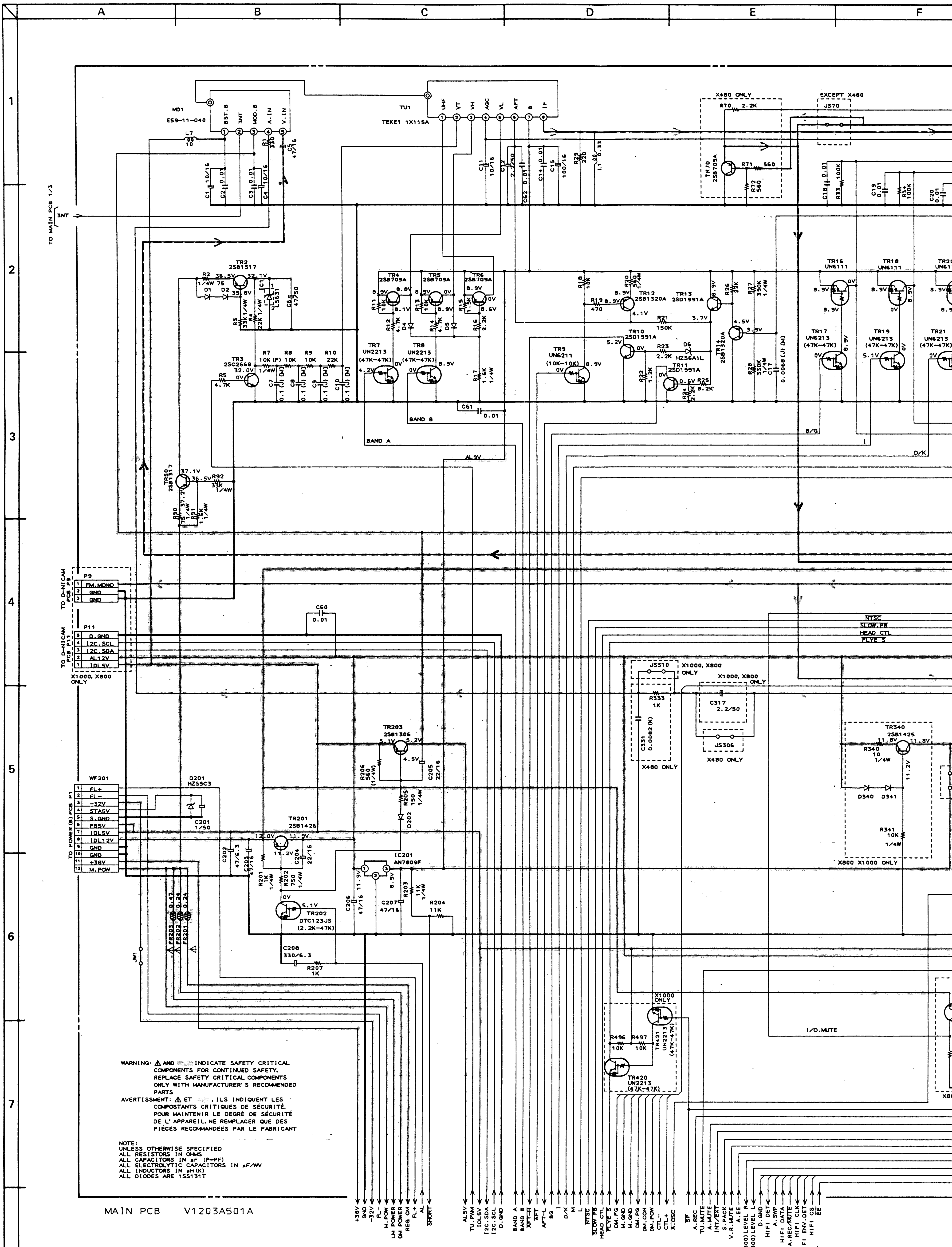
AVERTISSMENT: ⚠ ET ▨, ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

▨ : B (POWER SUPPLY) LINE
▨ : CAPSTAN MOTOR SPEED CONTROL LINE
▨ : CAPSTAN MOTOR PHASE CONTROL LINE
━━ : DRUM MOTOR SPEED CONTROL LINE
━ ━ : DRUM MOTOR PHASE CONTROL LINE

INDICATED VOLTAGES WERE MEASURED DURING PB MODE.
(TAPE SPEED: SP)

VS-X480EGN
VS-X800EGN-N
VS-X1000EGN-N
MAIN 2/3
(SERVO/SYSCON BLK)
SCHEMATIC DIAGRAM

No. 22-4 V120304M
A1

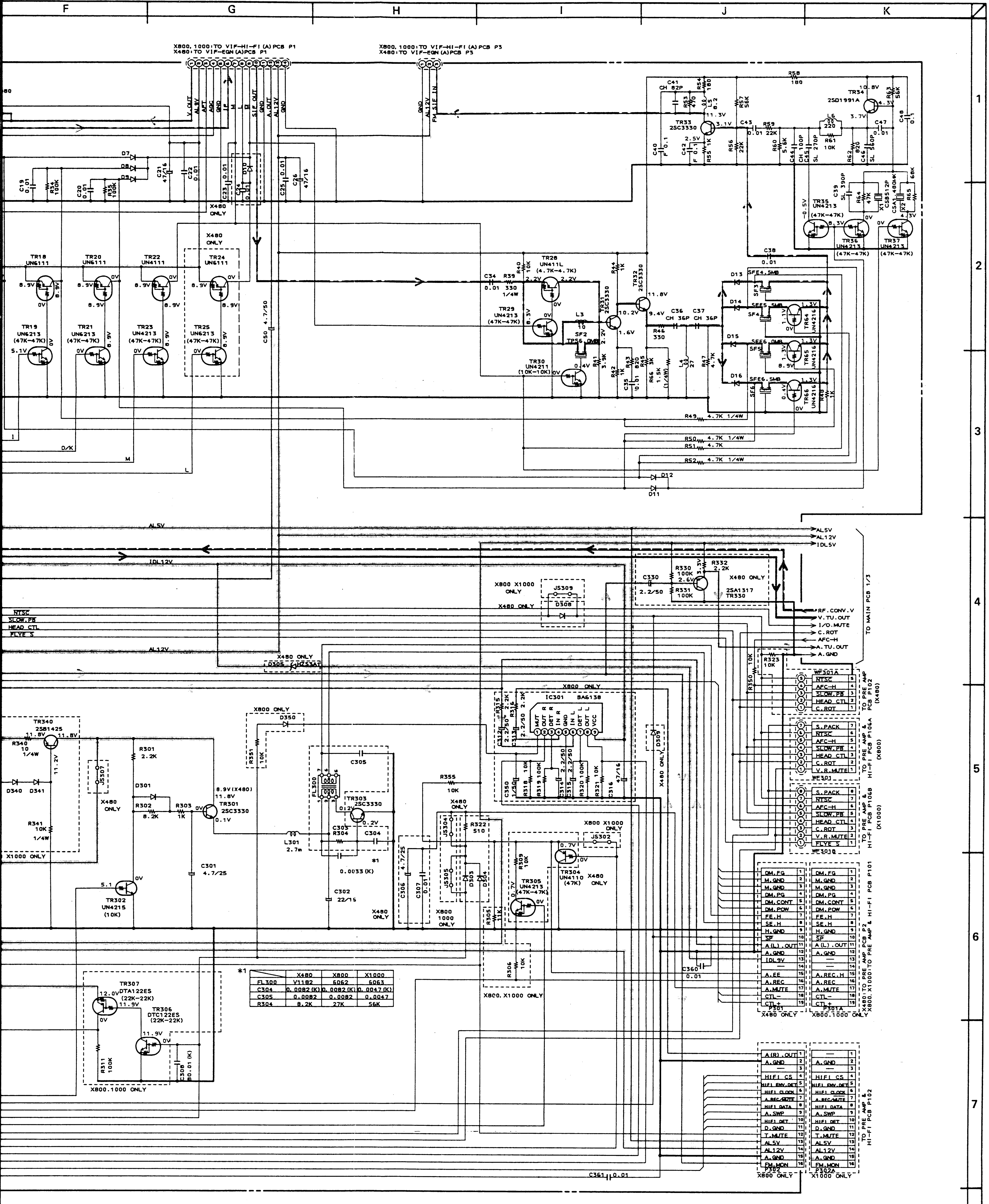

A
B
C
D
E
F
1
2
3
4
5
6
7
8
MD1
E59-11-040
BST.B
3NT
MOD.B
A.IN
V.IN
TU1
TEKE1 1X115A
UHF
VT
VH
AGC
VL
AFT
B
IF
TO MAIN PCB 1/3
3NT
L7
C1 10/16
C2 0.01
C3 0.01
C4 10/16
R1 330
C5 47/16
C11 10/16
C12 2.2/50
C62 0.01
C14 0.01
C15 100/16
R73 220
L1 0.33
X480 ONLY
R70 2.2K
TR70 2SB709A
R71 560
R72 560
EXCEPT X480
JS70
C18 0.01
R33 100K
C19 0.01
R34 100K
C20 0.01
TR2 2SB1317
R2 75 1/4W
36.5V
32.1V
35.8V
D1
D2
IC1 L5631
C6 47/50
R3 33K 1/4W
R4 22K 1/4W
TR3 2SC2668
32.0V
R5 4.7K
R7 10K (F) 1/4W
R8 10K
R9 10K
R10 22K
C7 0.1 (J) D4
C8 0.1 (J) D4
C9 0.1 (J) D4
C10 0.1 (J) D4
TR4 2SB709A
TR5 2SB709A
TR6 2SB709A
R11 10K
R12 4.7K
R13 10K
R14 4.7K
R15 4.7K
R16 2.2K
D3
D4
D5
TR7 UN2213 (47K-47K)
TR8 UN2213 (47K-47K)
R17 1.6K 1/4W
C61 0.01
BAND B
BAND A
AL9V
R18 10K
R19 470
R20 820 1/4W
TR12 2SB1320A
TR13 2SD1991A
R21 150K
TR9 UN6211 (10K-10K)
TR10 2SD1991A
R23 2.2K
D6 HZS6A1L
TR11 2SD1991A
R22 1.2K
R24 8.2K
R25
R26 22K
R27 390K 1/4W
TR14 2SB1320A
R28 330K 1/4W
C17 0.0068 (J) D4
TR16 UN6111
TR18 UN6111
TR17 UN6213 (47K-47K)
TR19 UN6213 (47K-47K)
TR21 UN6213 (47K-47K)
B/G
I
D/K
TR50 2SB1317
37.1V
36.5V
R92 33K 1/4W
R90 75 1/4W
R91 1.5K 1/4W
TO D-NICAM PCB P9
P9
FM.MONO
GND
GND
C60 0.01
TO D-NICAM PCB P11
P11
D.GND
I2C.SCL
I2C.SDA
AL12V
IDL5V
X1000, X800 ONLY
JS310
X1000, X800 ONLY
R333 1K
C331 0.0082 (K)
X480 ONLY
C317 2.2/50
JS306
X480 ONLY
NTSC
SLOW PB
HEAD CTL
FLYE S
TR203 2SB1306
R206 560 (1/4W)
C205 22/16
R205 150 1/4W
D202
TR340 2SB1425
R340 10 1/4W
D340
D341
R341 10K 1/4W
X800 X1000 ONLY
TO POWER (B) PCB P1
WF201
FL+
FL-
-32V
STA5V
S.GND
FB5V
IDL5V
IDL12V
GND
GND
+38V
M.POW
D201 HZS5C3
C201 1/50
TR201 2SB1426
C202 47/6.3
C203 47/16
R201 1K 1/4W
R202 750 1/4W
C204 22/16
IC201 AN7809F
C206 47/16
C207 47/16
R203 11K 1/4W
R204 11K
TR202 DTC123JS (2.2K-47K)
C208 330/6.3
R207 1K
FR201 0.24
FR202 0.24
FR203 0.47
JW1
I/O.MUTE
X1000 ONLY
R496 10K
R497 10K
TR421 UN2213 (47K-47K)
TR420 UN2213 (47K-47K)
+38V
GND
-32V
FL-
M.POW
LM POWER
DM POWER
REG CM
FL+
AL
SHORT
AL5V
TU.PWM
IDL5V
I2C.SDA
I2C.SCL
D.GND
BAND A
BAND B
AFT-H
AFT
AFT-L
BG
I
D/K
M
L
NTSC
SLOW PB
HEAD CTL
FLYE S
DM.FG
M.GND
M.GND
DM.PG
DM.CON
DM.POW
CTL-
CTL+
A.OSC
SP
A.REC
TU.MUTE
A.MUTE
INT/EXT
S.PACK
V.R.MUTE
A.EE
(X800)LEVEL R
(X800)LEVEL L
D.GND
HIFI DET
A.SWP
HIFI DATA
A.REC/MUTE
HIFI CLK
HIFI ENV.DET
HIFI CS
EE
TO MAIN PCB 2/3

WARNING: ⚠ AND ▨ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET ▨, ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL. NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN µF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN µF/WV
ALL INDUCTORS IN µH (K)
ALL DIODES ARE 1SS131T

MAIN PCB V1203A501A


F
G
H
I
J
K
1
2
3
4
5
6
7
8
X800, 1000: TO VIF-HI-FI (A) PCB P1
X480: TO VIF-EGN (A) PCB P1
X800, 1000: TO VIF-HI-FI (A) PCB P3
X480: TO VIF-EGN (A) PCB P3
V.OUT
AL9V
AFT
AGC
GND
IF
M
L
R
SIF OUT
GND
A.OUT
AL12V
GND
FM SIF IN
TR18 UN6111
TR19 UN6213 (47K-47K)
TR20 UN6111
TR21 UN6213 (47K-47K)
TR22 UN4111
TR23 UN4213 (47K-47K)
TR24 UN6111
TR25 UN6213 (47K-47K)
X480 ONLY
TR28 UN411L (4.7K-4.7K)
TR29 UN4213 (47K-47K)
TR30 UN4211 (10K-10K)
TR31 2SC3330
TR32 2SC3330
TR33 2SC3330
TR34 2SD1991A
TR35 UN4213 (47K-47K)
TR36 UN4213 (47K-47K)
TR37 UN4213 (47K-47K)
TR64 UN4216
TR65 UN4216
TR66 UN4216
SF2 TPS6.0MB
SFE4.5MB
SFE5.5MB
SFE6.0MB
SFE6.5MB
CSB512P
CSA480MK
AL5V
AL12V
IDL12V
IDL5V
NTSC
SLOW.PB
HEAD CTL
FLYE S
RF.CONV.V
V.TU.OUT
I/O.MUTE
C.ROT
AFC-H
A.TU.OUT
A.GND
TO MAIN PCB 1/3
TR330 2SA1317
X480 ONLY
X800 X1000 ONLY
JS309
D308
D305
HZS3A
IC301 BA6138
X800 ONLY
TR340 2SB1425
X1000 ONLY
TR301 2SC3330
TR302 UN4215 (10K)
TR303 2SC3330
FL300
L301 2.7m
TR304 UN4110 (47K)
TR305 UN4213 (47K-47K)
TR306 DTC122ES (22K-22K)
TR307 DTA122ES (22K-22K)
X800, 1000 ONLY
X800, X1000 ONLY
WF301A
WF301
WF301B
TO PRE AMP PCB P102 (X480)
TO PRE AMP & HI-FI PCB P106A (X800)
TO PRE AMP & HI-FI PCB P106B (X1000)
X480:TO PRE AMP PCB P2 X800, X1000:TO PRE AMP & HI-FI PCB P101
TO PRE AMP & HI-FI PCB P102
P301 X480 ONLY
P301A X800, 1000 ONLY
P302 X800 ONLY
P302A X1000 ONLY
DM.FG
M.GND
DM.PG
DM.CONT
DM.POW
FE.H
SE.H
H.GND
SP
A(L).OUT
A.GND
IDL9V
A.EE
A.REC
A.MUTE
CTL-
CTL+
A.REC.H
S.PACK
V.R.MUTE
A(R).OUT
HIFI CS
HIFI ENV.DET
HIFI CLOCK
A.REC.MUTE
HIFI DATA
A.SWP
HIFI DET
D.GND
T.MUTE
FM.MON

*1

	X480	X800	X1000
FL300	V1182	6062	6063
C304	0.0082 (K)	0.0082 (K)	0.0047 (K)
C305	0.0082	0.0082	0.0047
R304	8.2K	27K	56K

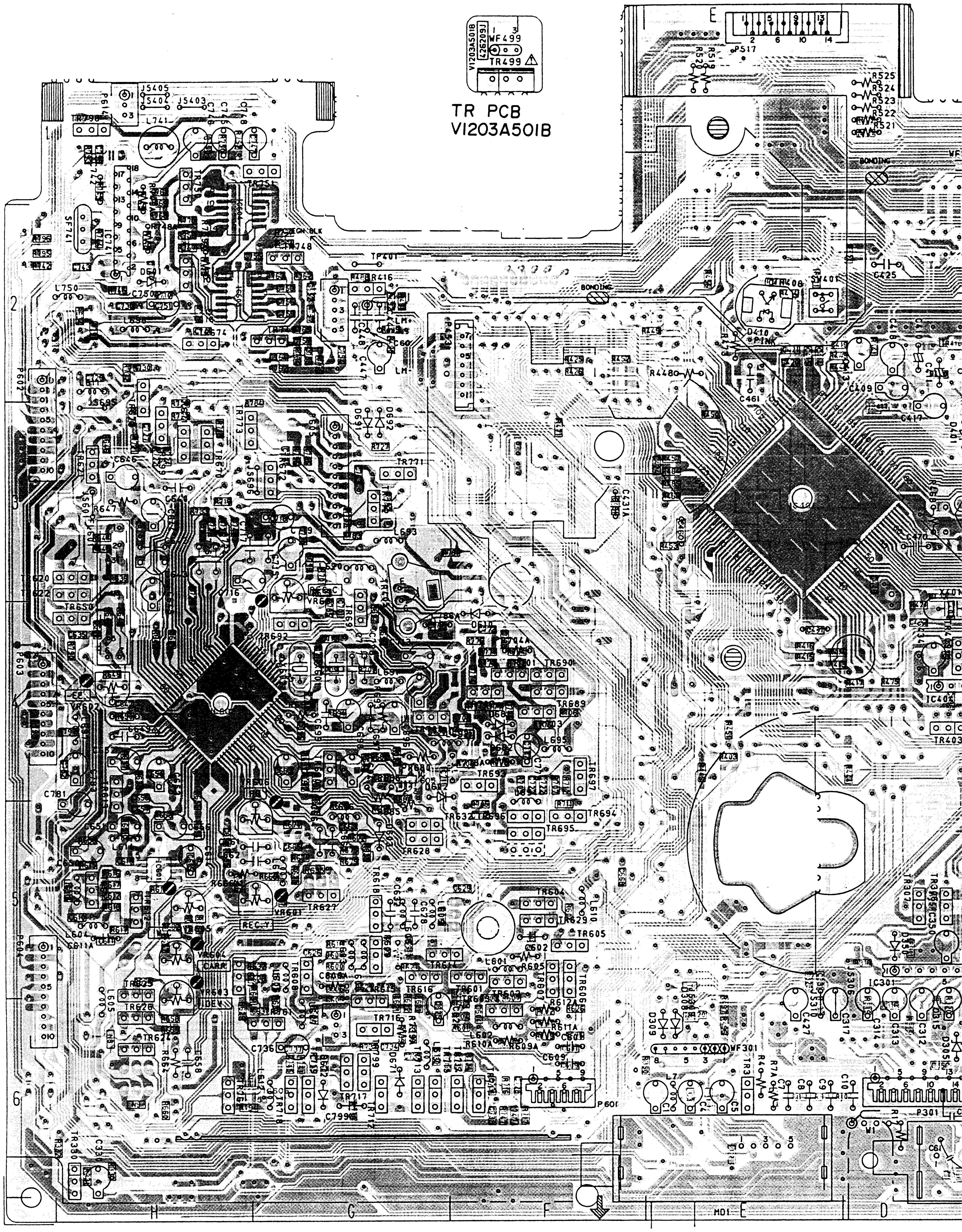
INDICATED VOLTAGES WERE MEASURED DURING PB MODE.

(TAPE USED: PAL COLOUR BAR TAPE
TAPE SPEED: SP)

: B (POWER SUPPLY) LINE
: AUDIO OUT SIGNAL LINE
: AUDIO IN SIGNAL LINE
– – – – – – : VIDEO OUT SIGNAL LINE
———— : VIDEO IN SIGNAL LINE
——— – —— : SIF SIGNAL LINE

VS-X480EGN
VS-X800EGN-N
VS-X1000EGN-N
MAIN 3/3
(RF, AUDIO, POWER BLK)
SCHEMATIC DIAGRAM

No. 22-5 V120305M
A1

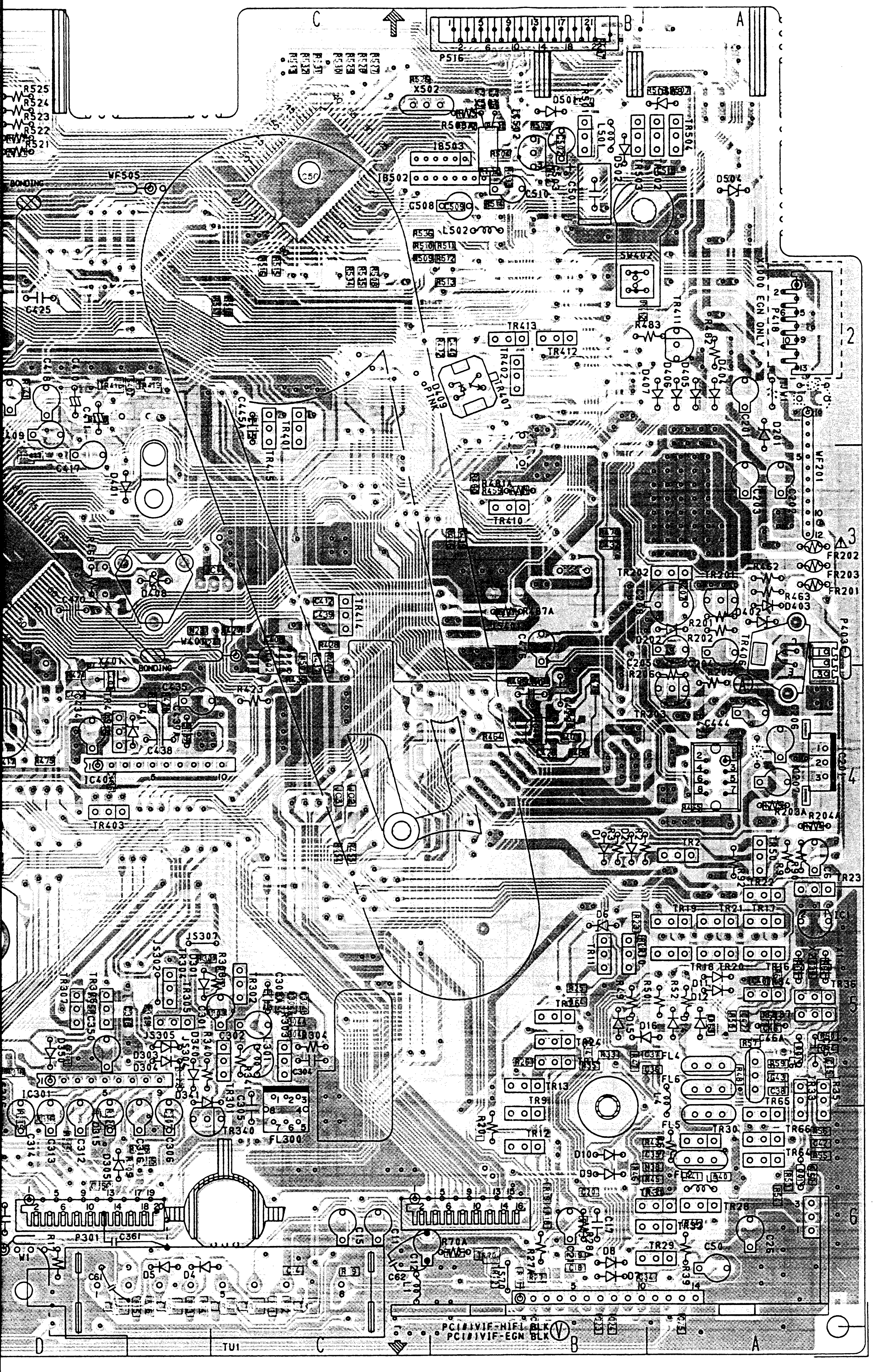

TR PCB
V1203A501B
WF499
TR499
V1203A501B
4262091
P517
BONDING
H
G
F
E
MD1
D
P601
P301
WF301
IC301

MAIN PC

WF301 : 2P∼8P
WF301A : 3P∼7P
WF301B : 1P∼8P

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY.
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT



MAIN PCB V1203A501A

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT
PARTS INFORMATION.

PRINCIPAL PARTS LOCATION

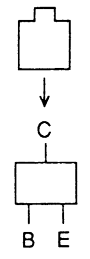
ICs	
IC1	A5
IC201	A4
IC301	D5
IC401	D,E3
IC402	C3
IC403	B4
IC404	D4
IC501	C1
IC502	B1
IC601	H5
IC602	H4
IC603	H2
IC604	H1,2
IC605	G4
IC606	H,G6
IC741	H1,2

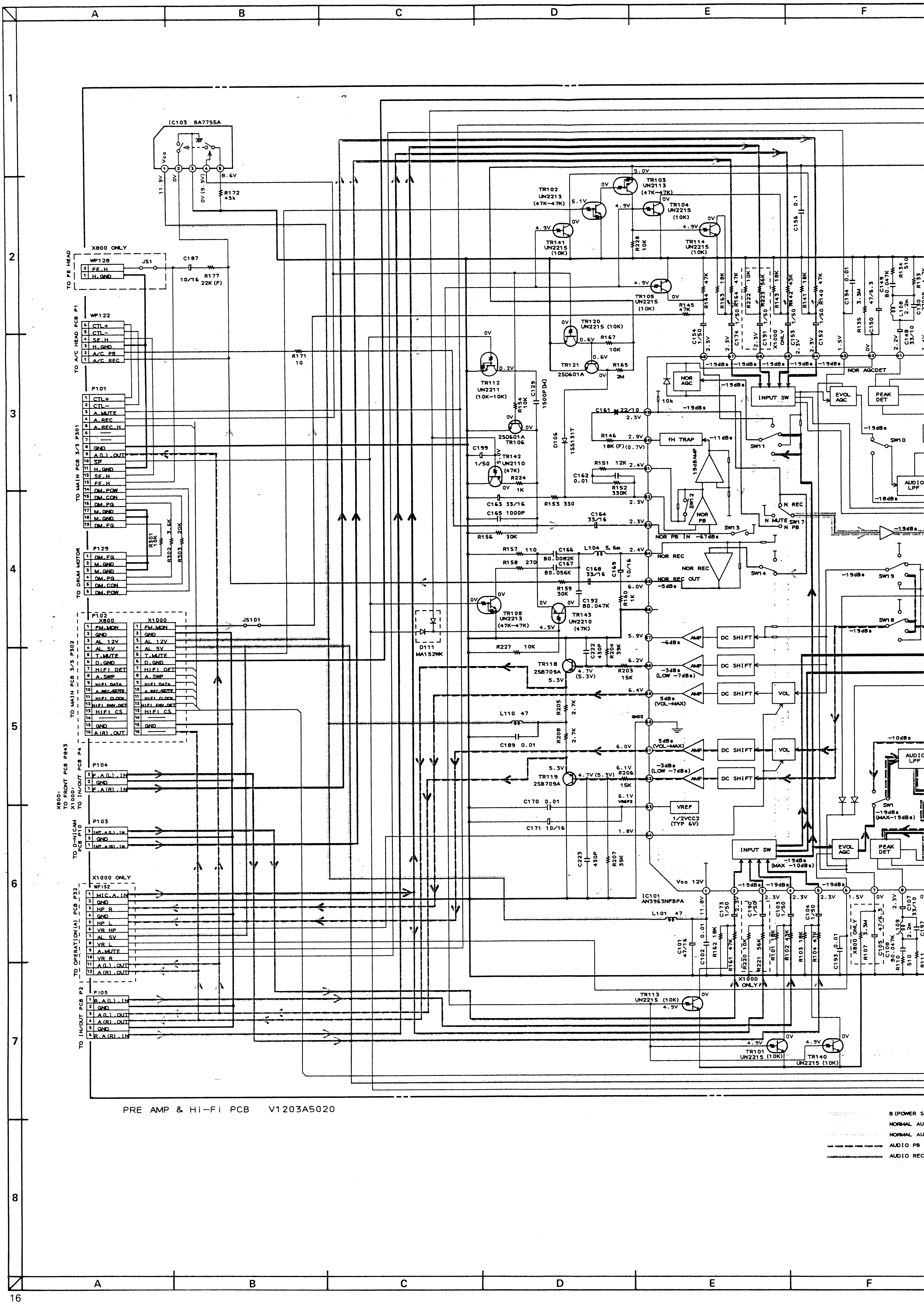
TRANSISTORs	
TR2	A4
TR3	E6
TR4	C6
TR5	D6
TR6	D6
TR7	C6
TR8	C6
TR9	B6
TR10	B5
TR11	B5
TR12	B6
TR13	B5
TR14	B5
TR16	A5
TR17	A5
TR18	A5
TR19	A5
TR20	A5
TR21	A5
TR22	A5
TR23	A5
TR24	B5
TR25	B5
TR28	A6
TR29	A6
TR30	A6
TR31	A6
TR32	A6
TR33	A5,6
TR34	A5
TR35	A5,6
TR36	A5
TR37	A5
TR50	A4
TR64	A6
TR65	A6
TR66	A6
TR201	A3
TR202	A3
TR203	A4
TR301	C5
TR302	C5
TR303	C5
TR304	D5
TR305	D5
TR306	D5
TR307	D5
TR330	H6
TR340	B,C6
TR401	C2
TR402	B2
TR403	D4
TR404	D,C3
TR405	G3,4
TR406	A3,4
TR407	B2
TR408	E2
TR409	D4
TR410	B3
TR411	A6
TR412	B2
TR413	B2
TR414	C3
TR415	C2
TR416	G2
TR417	D3
TR418	D2
TR419	D2
TR420	E6
TR421	E5,6
TR501	B1
TR502	A1
TR503	B1
TR504	A1
TR601	F5
TR602	F5
TR603	F6
TR604	F5
TR605	F5
TR606	F5
TR607	F5
TR608	G5
TR609	G5
TR611	H5
TR612	H5
TR613	H4,5
TR614	F,G5
TR615	G6
TR616	G5
TR617	H5
TR618	G5
TR620	H3
TR621	H3
TR622	H3
TR624	H6
TR625	H5,6
TR626	H6
TR627	G5
TR628	G5
TR629	F5
TR630	G4
TR632	G5
TR650	H4
TR670	H3
TR671	H3
TR672	G3
TR673	H2,3
TR674	H2
TR689	F4
TR690	F4
TR691	G3
TR692	G4
TR693	F4
TR694	F5
TR695	F5
TR696	F5
TR697	F3,4
TR699	H3
TR700	G4
TR701	F4
TR702	F4
TR703	F4
TR704	F4
TR711	F6
TR712	G6
TR713	G6
TR714	F6
TR715	G6
TR716	G6
TR717	G6
TR718	G6
TR719	G6
TR747	H2
TR748	G2
TR749	G2
TR750	H1
TR751	G1
TR761	G6
TR762	H6
TR771	G3
TR772	G3
TR773	H3
TR798	H1
TR799	G6

CONNECTORs	
P9	G6
P11	G2
P301	D6
P302	B6
P403	A3,4
P418	A2
P420	A4
P453	F2
P516	B1
P517	E1
P601	F6
P602	H2,3
P603	H4
P604	H5,6
P605	G3
P614	H1

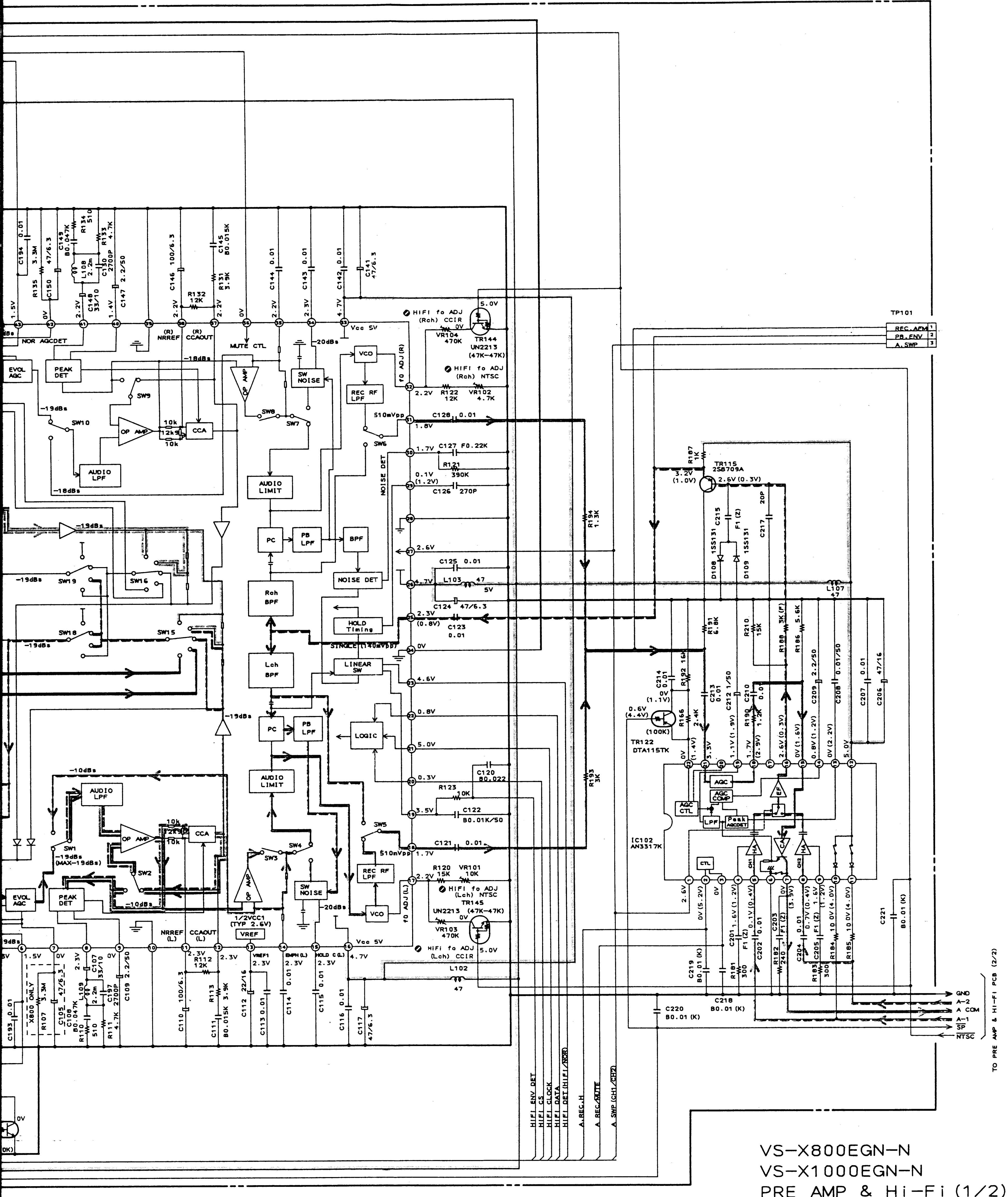
WIREs	
WF201	A2,3
WF301	E6

SINGLE CHIP
TRANSISTOR




A
B
C
D
E
F
IC103 BA7755A
Vcc
R172 43k
X800 ONLY
WP128
FE.H
H.GND
TO FE HEAD
JS1
C187 10/16
R177 22K (F)
WP122
CTL+
CTL-
SE.H
H.GND
A/C PB
A/C REC
TO A/C HEAD PCB P1
R171 10
P101
A.MUTE
A.REC
A.REC.H
GND
A(L).OUT
SP
FE.H
DM.POW
DM.CON
DM.PG
M.GND
DM.FG
TO MAIN PCB 3/3 P301
R301 10K
R302 3.6K
R303 20K
P129
TO DRUM MOTOR
P102
X800
X1000
FM.MON
AL 12V
AL 5V
T.MUTE
D.GND
HIFI DET
A.SWP
HIFI DATA
A.REC/SDTE
HIFI CLOCK
HIFI ENV.DET
HIFI CS
A(R).OUT
TO MAIN PCB 3/3 P302
JS101
D111 MA152WK
P104
F.A(L).IN
F.A(R).IN
X800: TO FRONT PCB P843
X1000: TO IN/OUT PCB P4
P103
INT.A(L).IN
INT.A(R).IN
TO D-NICAM PCB P10
X1000 ONLY
WF132
MIC.A.IN
HP R
HP L
VR HP
VR L
A.MUTE
VR R
A(L).OUT
A(R).OUT
TO OPERATION(A) PCB P32
P105
R.A(L).IN
A(L).OUT
A(R).OUT
R.A(R).IN
TO IN/OUT PCB P2
TR102 UN2213 (47K-47K)
TR103 UN2113 (47K-47K)
TR104 UN2215 (10K)
TR141 UN2215 (10K)
TR114 UN2215 (10K)
TR105 UN2215 (10K)
TR120 UN2215 (10K)
TR121 2SD601A
TR112 UN2211 (10K-10K)
TR106 2SD601A
TR142 UN2110 (47K)
TR108 UN2213 (47K-47K)
TR143 UN2210 (47K)
TR118 2SB709A
TR119 2SB709A
TR113 UN2215 (10K)
TR101 UN2215 (10K)
TR140 UN2215 (10K)
D106 1SS131T
IC101 AN3963NFBPA
Vcc 12V
NOR AGC
INPUT SW
EVOL AGC
PEAK DET
NOR AGCDET
fH TRAP
19dB AMP
NOR PB
NOR PB IN -67dBs
N REC
N MUTE
N PB
NOR REC
NOR REC OUT
AMP
DC SHIFT
VOL
VREF
1/2VCC2 (TYP 6V)
AUDIO LPF
SW1
SW10
SW11
SW12
SW13
SW14
SW17
SW18
SW19
L104 5.6m
L110 47
L101 47
GND2
X1000 ONLY
X800 ONLY
B (POWER S
NORMAL AU
NORMAL AU
AUDIO PB
AUDIO REC

PRE AMP & Hi-Fi PCB V1203A5020


IC102
AN3317K
TR115
2SB709A
TR122
DTA115TK
TR144
UN2213
(47K-47K)
TR145
UN2213 (47K-47K)
TP101
REC.AFM
PB.ENV
A.SWP
HIFI fo ADJ (Rch) CCIR
HIFI fo ADJ (Rch) NTSC
HIFI fo ADJ (Lch) NTSC
HIFI fo ADJ (Lch) CCIR
VR101
VR102
VR103
VR104
EVOL AGC
PEAK DET
OP AMP
CCA
AUDIO LPF
AUDIO LIMIT
SW NOISE
VCO
REC RF LPF
PC
PB LPF
BPF
Rch BPF
Lch BPF
NOISE DET
HOLD Timing
LINEAR SW
LOGIC
MUTE CTL
NOR AGCDET
NRREF
CCAOUT
VREF
1/2VCC1 (TYP 2.6V)
AGC
AGC CTL
AGC COMP
LPF
Peak AGCDET
CTL
SW1
SW2
SW3
SW4
SW5
SW6
SW7
SW8
SW9
SW10
SW15
SW16
SW18
SW19
-19dBs
-18dBs
-20dBs
-10dBs
510mVpp
SINGLE (140mVpp)
Vcc 5V
GND
A-2
A COM
A-1
SP
NTSC
TO PRE AMP & HI-FI PCB (2/2)
HIFI ENV DET
HIFI CS
HIFI CLOCK
HIFI DATA
HIFI DET (HIFI/NOR)
A.REC.H
A.REC/MUTE
A.SWP (CH1/CH2)
X800 ONLY

B (POWER SUPPLY) LINE
NORMAL AUDIO PB SIGNAL LINE
NORMAL AUDIO REC SIGNAL LINE
AUDIO PB SIGNAL LINE
AUDIO REC & EE SIGNAL LINE

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN µF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN µF/WV
ALL INDUCTORS IN µH

INDICATED VOLTAGES WERE
MEASURED DURING PB MODE.
( ) : REC MODE
(TAPE SPEED: SP)

VS-X800EGN-N
VS-X1000EGN-N
PRE AMP & Hi-Fi (1/2)
(AUDIO BLK)
SCHEMATIC DIAGRAM

No. 22-6 V120307M
A1

PRINCIPAL PARTS LOCATION

ICs

IC1	B1,2
IC101	E1,2
IC102	C1
IC103	E1

TRANSISTORs

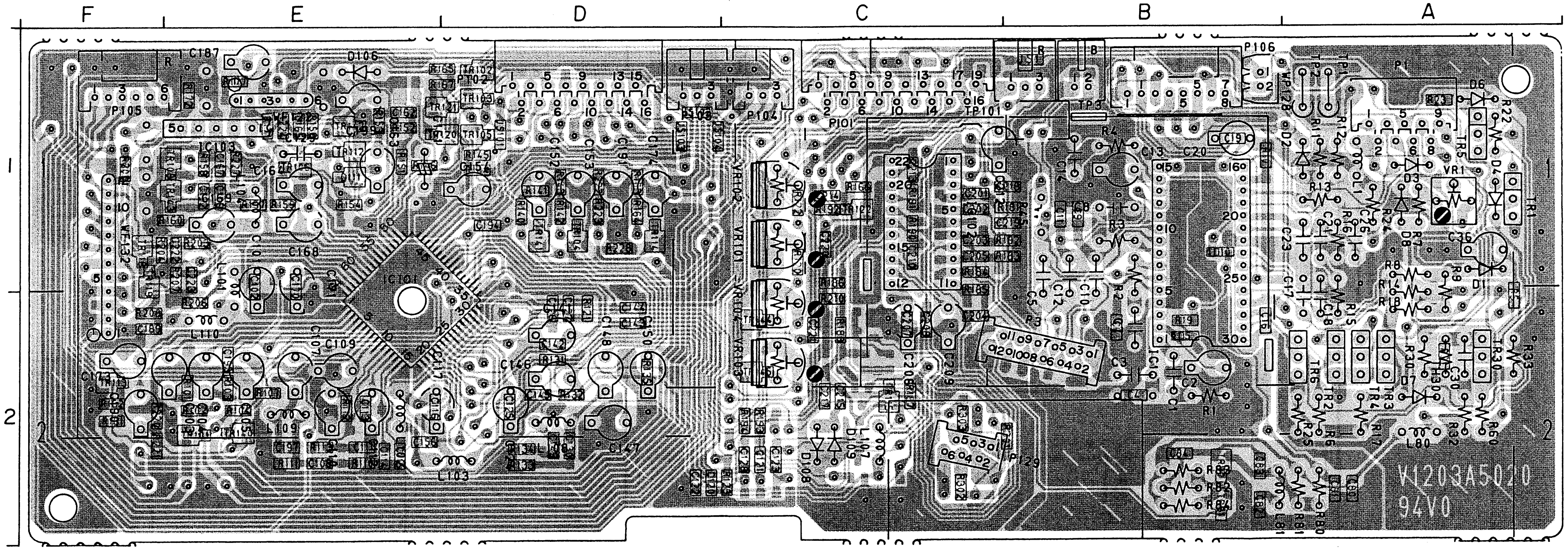
TR1	A1
TR2	A2
TR3	A2
TR4	A2
TR5	A1
TR6	A2
TR30	A2
TR80	B2
TR81	B2
TR101	E2
TR102	D1
TR103	D1
TR104	D1
TR105	D1
TR106	E1
TR108	E1
TR112	E1
TR113	F2
TR114	D1
TR115	C2
TR118	E,F2
TR119	E,F1
TR120	D1
TR121	D1
TR122	C1
TR140	E2
TR141	D1
TR142	E1
TR143	E1
TR144	C2
TR145	C2

CONNECTORs

P1	A1
P3	B2
P101	C1
P102	D1
P103	D1
P104	C1
P105	E,F1
P106	B1
P129	B,C2
WP128	B1

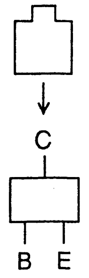
WIREs

WF122	E1
WF132	F1,2

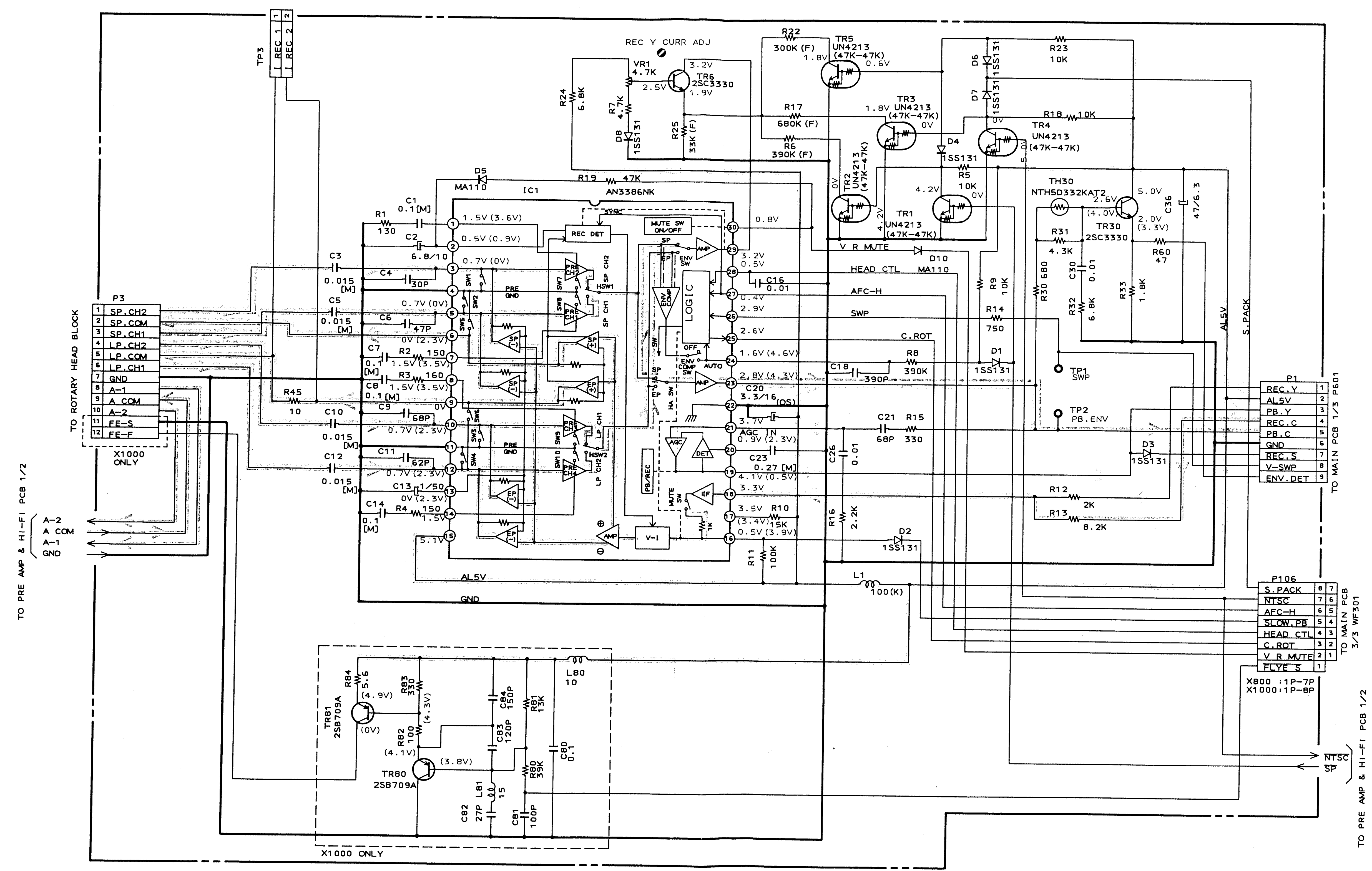


PRE AMP & Hi-Fi PCB V1203A5020

SINGLE CHIP TRANSISTOR



NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.


A B C D E F G H I J K
1 2 3 4 5 6 7 8
TP3
1 REC 1
1 REC 2
REC Y CURR ADJ
VR1 4.7K
TR6 2SC3330
3.2V
2.5V
1.9V
R24 6.8K
R7 4.7K
D8 1SS131
R25 33K (F)
R22 300K (F)
TR5 UN4213 (47K-47K)
1.8V
0.6V
R17 680K (F)
R6 390K (F)
TR3 UN4213 (47K-47K)
TR2 UN4213 (47K-47K)
TR1 UN4213 (47K-47K)
D6 1SS131
D7 1SS131
R23 10K
R18 10K
TR4 UN4213 (47K-47K)
D4 1SS131
R5 10K
4.2V
TH30 NTH5D332KAT2
TR30 2SC3330
5.0V
2.6V (4.0V)
2.0V (3.3V)
C36 47/6.3
R31 4.3K
R60 47
D5 MA110
R19 47K
IC1 AN3386NK
C1 0.1[M]
R1 130
C2 6.8/10
C3 0.015 [M]
C4 30P
C5 0.015 [M]
C6 47P
C7 0.1 [M]
R2 150
R3 160
C8 0.1 [M]
C9 68P
C10 0.015 [M]
C11 62P
C12 0.015 [M]
C13 1/50
C14 0.1 [M]
R4 150
R45 10
1.5V (3.6V)
0.5V (0.9V)
0.7V (0V)
0.7V (0V)
0V (2.3V)
1.5V (3.5V)
1.5V (3.5V)
0.7V (2.3V)
0.7V (2.3V)
0V (2.3V)
1.5V
5.1V
REC DET
MUTE SW ON/OFF
AMP
LOGIC
ENV COMP
PRE CH2
PRE CH1
PRE CH3
PRE CH4
PRE GND
SP CH2
SP CH1
LP CH1
LP CH2
HSW1
HSW2
SW1 SW2 SW3 SW4 SW5 SW6 SW7 SW8 SW9 SW10
SP (+)
SP (-)
EP (+)
EP (-)
AGC
DET
EF
V-I
PB/REC
MUTE SW
OFF
AUTO
0.8V
3.2V 0.5V
0.4V
2.9V
2.6V
1.6V (4.6V)
2.8V (4.3V)
C16 0.01
C20 3.3/16 (OS)
3.7V
AGC IN 0.9V (2.3V)
C23 0.27 [M]
4.1V (0.5V)
3.3V
3.5V
R10 15K
(3.4V)
0.5V (3.9V)
V R MUTE
D10 MA110
HEAD CTL
AFC-H
SWP
C.ROT
C18 390P
R8 390K
C21 68P
R15 330
C26 0.01
R16 2.2K
R11 100K
D2 1SS131
L1 100(K)
R9 10K
R30 680
C30 0.01
R32 6.8K
R33 1.8K
R14 750
D1 1SS131
TP1 SWP
TP2 PB.ENV
D3 1SS131
R12 2K
R13 8.2K
AL5V
S.PACK
GND
P3
1 SP.CH2
2 SP.COM
3 SP.CH1
4 LP.CH2
5 LP.COM
6 LP.CH1
7 GND
8 A-1
9 A COM
10 A-2
11 FE-S
12 FE-F
X1000 ONLY
TO ROTARY HEAD BLOCK
A-2
A COM
A-1
GND
TO PRE AMP & Hi-Fi PCB 1/2
P1
REC.Y 1
AL5V 2
PB.Y 3
REC.C 4
PB.C 5
GND 6
REC.S 7
V-SWP 8
ENV.DET 9
TO MAIN PCB 1/3 P601
P106
S.PACK 8 7
NTSC 7 6
AFC-H 6 5
SLOW.PB 5 4
HEAD CTL 4 3
C.ROT 3 2
V R MUTE 2 1
FLYE S 1
X800 :1P-7P
X1000:1P-8P
TO MAIN PCB 3/3 WF301
NTSC
SP
TO PRE AMP & Hi-Fi PCB 1/2
TR81 2SB709A
R84 5.6
(4.9V)
(0V)
R83 330
(4.3V)
R82 100
(4.1V)
TR80 2SB709A
(3.8V)
C84 150P
C83 120P
R81 13K
L80 10
C80 0.1
R80 39K
C82 27P
L81 15
C81 100P
X1000 ONLY

PRE AMP & Hi-Fi PCB V1203A5020

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN µF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN µF/WV
ALL INDUCTORS IN µH

INDICATED VOLTAGES WERE MEASURED DURING PB MODE.
( ): REC MODE
(TAPE SPEED: SP)
THE VOLTAGES AT THE TR80 AND TR81 WERE MEASURED WITHIN 30 SECONDS RIGHT AFTER THE "REC" MODE HAS BEEN ENGAGED.

B (POWER SUPPLY) LINE
PB Y SIGNAL LINE
REC Y SIGNAL LINE
PB CHROMA SIGNAL LINE
REC CHROMA SIGNAL LINE
PB AUDIO SIGNAL LINE
REC AUDIO SIGNAL LINE

VS-X800EGN-N
VS-X1000EGN-N
PRE AMP & Hi-Fi (2/2)
(PRE AMP BLK)
SCHEMATIC DIAGRAM

No.22-7 V120308M
A2

PRINCIPAL PARTS LOCATION

ICs

IC1	B1,2
IC101	E1,2
IC102	C1
IC103	E1

TRANSISTORs

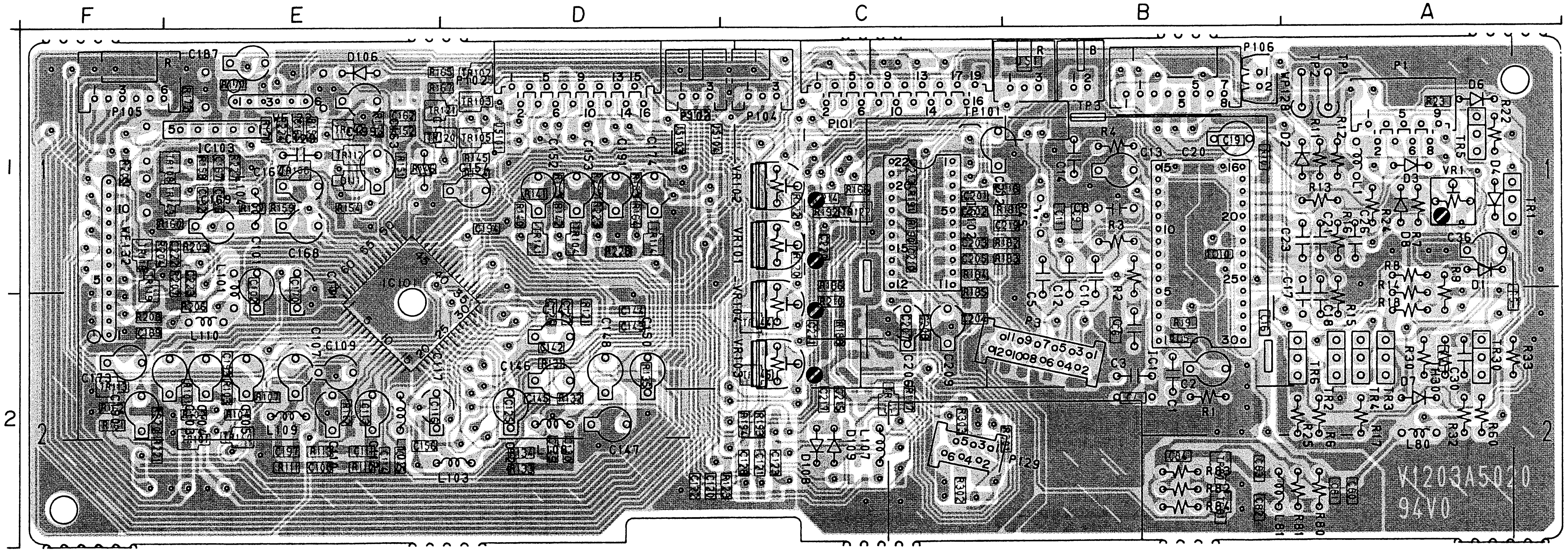
TR1	A1
TR2	A2
TR3	A2
TR4	A2
TR5	A1
TR6	A2
TR30	A2
TR80	B2
TR81	B2
TR101	E2
TR102	D1
TR103	D1
TR104	D1
TR105	D1
TR106	E1
TR108	E1
TR112	E1
TR113	F2
TR114	D1
TR115	C2
TR118	E,F2
TR119	E,F1
TR120	D1
TR121	D1
TR122	C1
TR140	E2
TR141	D1
TR142	E1
TR143	E1
TR144	C2
TR145	C2

CONNECTORs

P1	A1
P3	B2
P101	C1
P102	D1
P103	D1
P104	C1
P105	E,F1
P106	B1
P129	B,C2
WP128	B1

WIREs

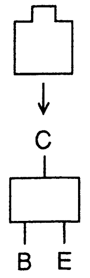
WF122	E1
WF132	F1,2



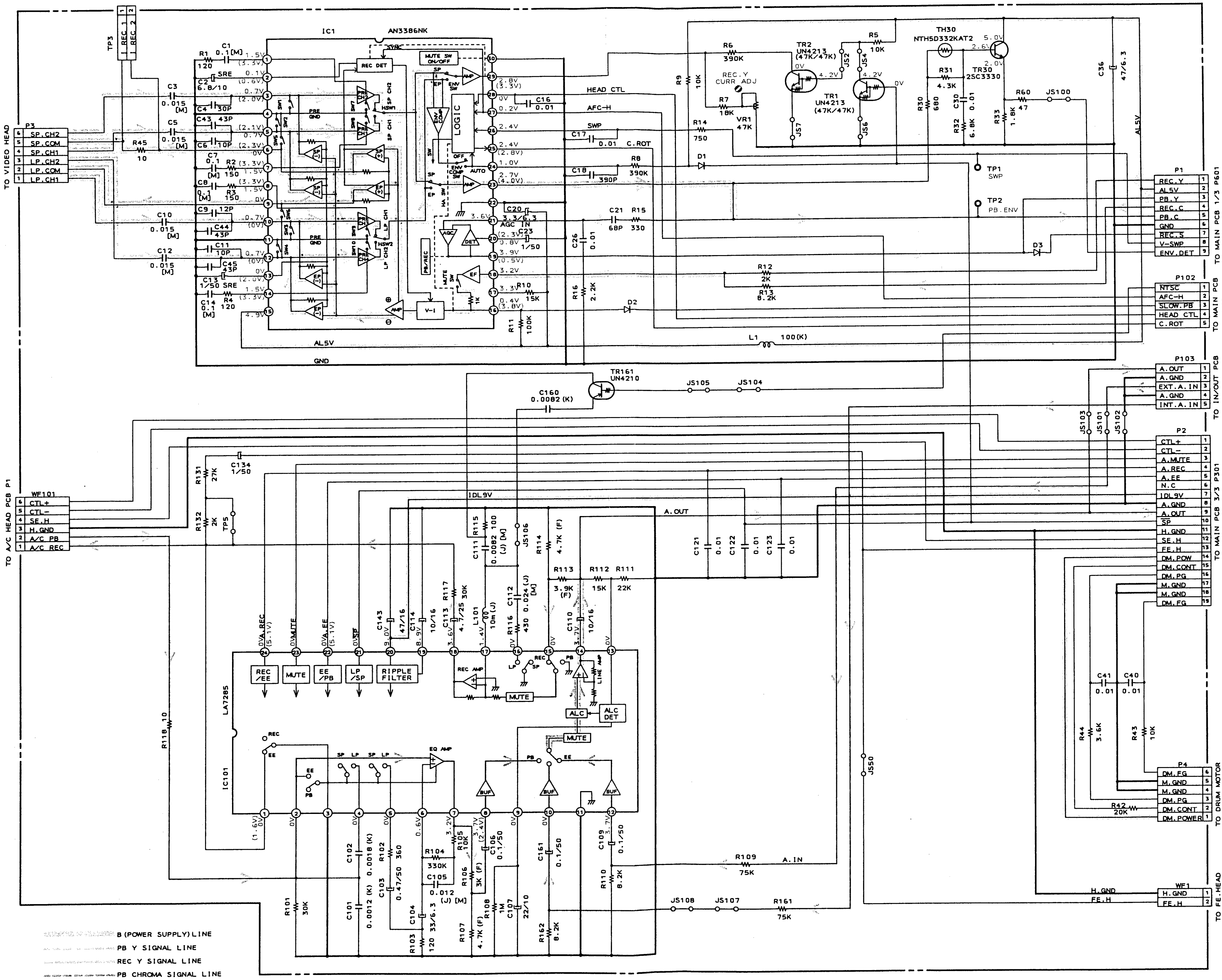
F
E
D
C
B
A
1
2
P105
IC103
C187
D106
IC101
P102
P101
P106
P1
TR1
VR1
P3
P129
L110
L109
L103
L107
L80
V1203A5020
94V0

PRE AMP & Hi-Fi PCB V1203A5020

SINGLE CHIP TRANSISTOR



NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.


IC1 AN3386NK
IC101 LA7285
TP3
P3 TO VIDEO HEAD
SP.CH2
SP.COM
SP.CH1
LP.CH2
LP.COM
LP.CH1
WF101 TO A/C HEAD PCB P1
CTL+
CTL-
SE.H
H.GND
A/C PB
A/C REC
P1 TO MAIN PCB 1/3 P601
REC.Y
ALSV
PB.Y
REC.C
PB.C
GND
REC.S
V-SWP
ENV.DET
P102 TO MAIN PCB 3/3 WF301
NTSC
AFC-H
SLOW.PB
HEAD CTL
C.ROT
P103 TO IN/OUT PCB P2
A.OUT
A.GND
EXT.A.IN
INT.A.IN
P2 TO MAIN PCB 3/3 P301
A.MUTE
A.REC
A.EE
N.C
IDL9V
SP
FE.H
DM.POW
DM.CONT
DM.PG
M.GND
DM.FG
P4 TO DRUM MOTOR
DM.POWER
WF1 TO FE.HEAD
TR2 UN4213
TR1 UN4213
TR30 2SC3330
TH30 NTH5D332KAT2
TR161 UN4210
REC.Y CURR ADJ
LOGIC
REC/EE
MUTE
EE/PB
LP/SP
RIPPLE FILTER
REC AMP
LINE AMP
ALC
ALC DET
EQ AMP
BUF

B (POWER SUPPLY) LINE
PB Y SIGNAL LINE
REC Y SIGNAL LINE
PB CHROMA SIGNAL LINE
REC CHROMA SIGNAL LINE
AUDIO PB SIGNAL LINE
AUDIO REC SIGNAL LINE

PRE AMP PCB V1184A5020

INDICATED VOLTAGES WERE
MEASURED DURING PB MODE.
( ) : REC MODE

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN µF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN µF/WV
ALL INDUCTORS IN µH (K)
ALL DIODES ARE 1SS131T

VS-X480EGN
PRE AMP
SCHEMATIC DIAGRAM
No.22-8 V120306M
A1

PRINCIPAL PARTS LOCATION

ICs

IC1	A,B2
IC101	A,B5

TRANSISTORs

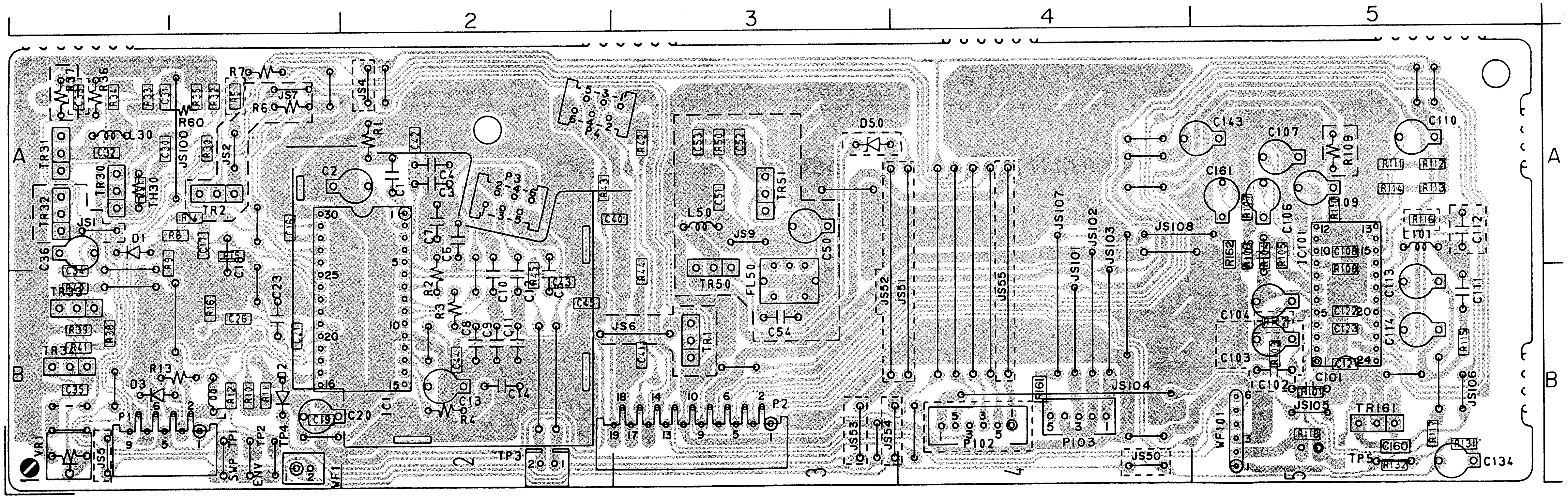
TR1	B3
TR2	A1
TR30	A1
TR31	A1
TR32	A1
TR33	B1
TR34	B1
TR50	A,B3
TR161	B5

WFs

TR1	B3
TR2	A1

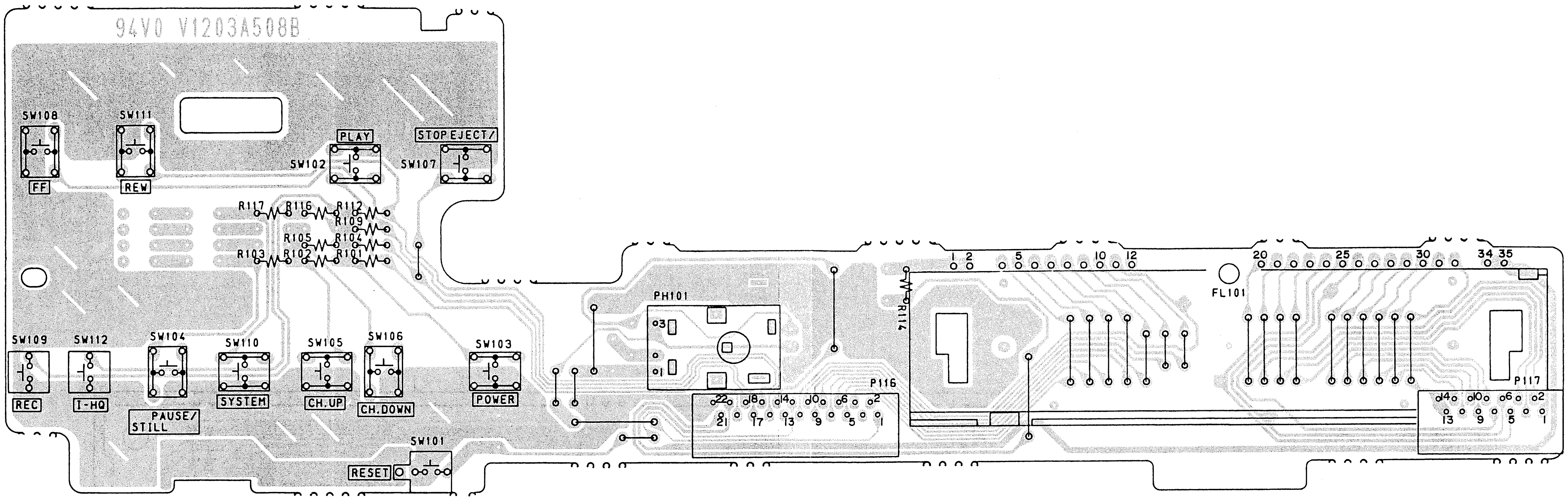
CONNECTORs

P1	B1
P2	B3
P3	A2
P4	A2,3
P102	B4
P103	B4

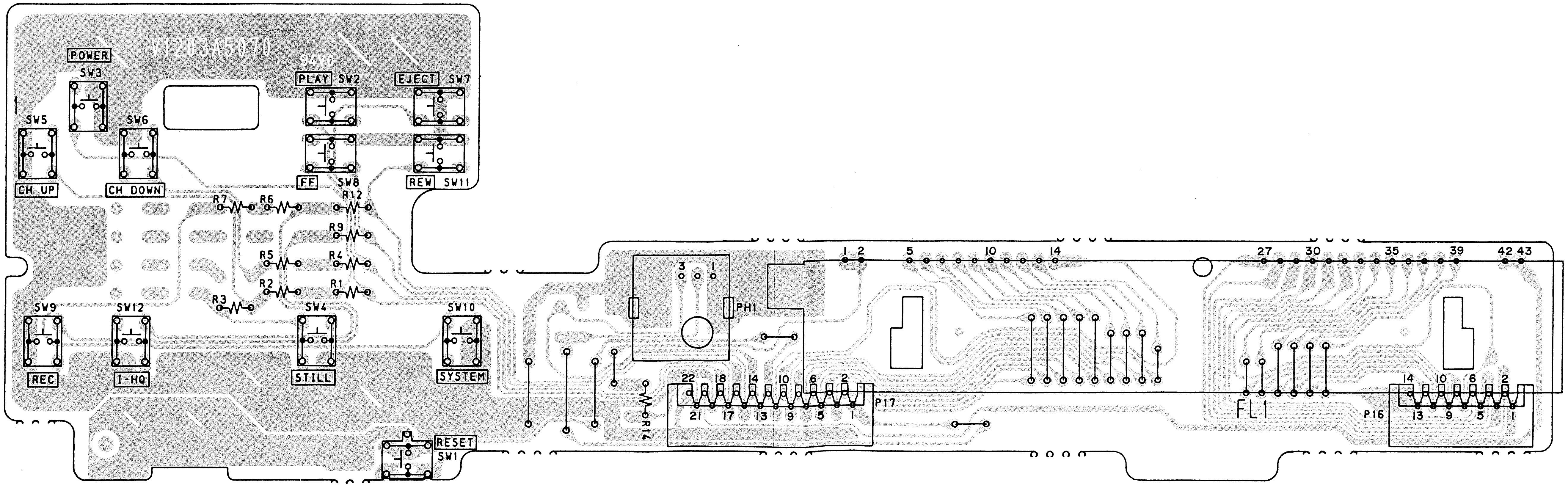

1
2
3
4
5
A
B
VR1
TR31
TR32
TR30
TH30
TR2
TR33
TR34
JS1
JS2
JS4
JS5
JS6
JS7
JS9
JS100
D1
D2
D3
R1
R2
R3
R4
R6
R7
R13
R60
L30
L50
C2
C13
C14
C19
C20
C23
C36
IC1
P1
P2
P3
TP1
TP2
TP3
TP4
TP5
SWP
ENY
WF1
D50
TR50
TR51
FL50
C50
C54
TR1
JS50
JS51
JS52
JS53
JS54
JS55
P102
P103
WF101
JS101
JS102
JS103
JS104
JS105
JS106
JS107
JS108
C101
C102
C103
C104
C106
C107
C110
C111
C112
C113
C114
C134
C143
C161
IC101
R109
TR161

PRE AMP PCB V1184A5020 J1

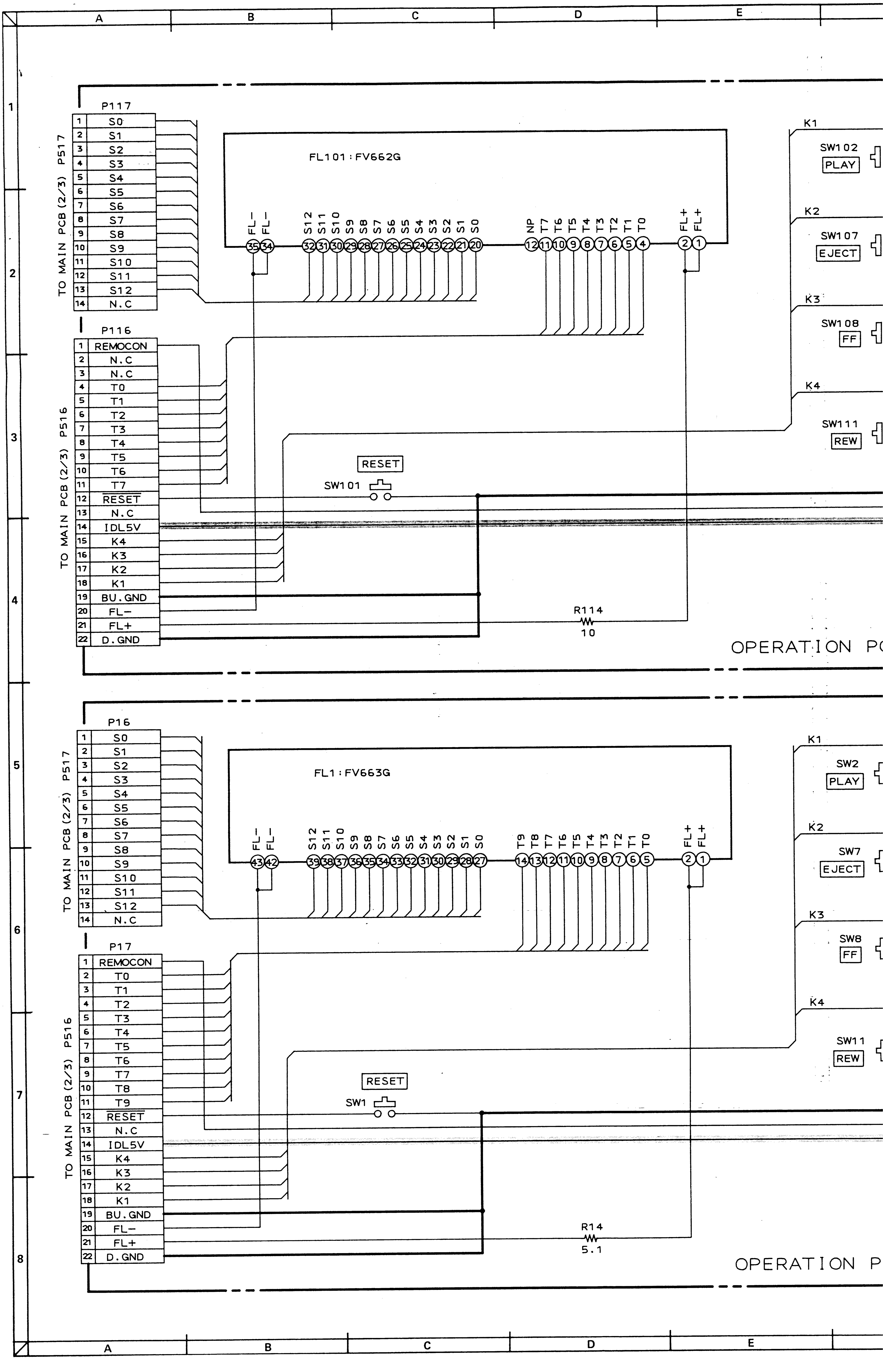
NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.


94V0 V1203A508B
SW108
FF
SW111
REW
PLAY
SW102
STOP EJECT/
SW107
R117
R116
R112
R109
R105
R104
R103
R102
R101
SW109
REC
SW112
I-HQ
SW104
PAUSE/
STILL
SW110
SYSTEM
SW105
CH.UP
SW106
CH.DOWN
SW103
POWER
SW101
RESET
PH101
P116
R114
FL101
P117

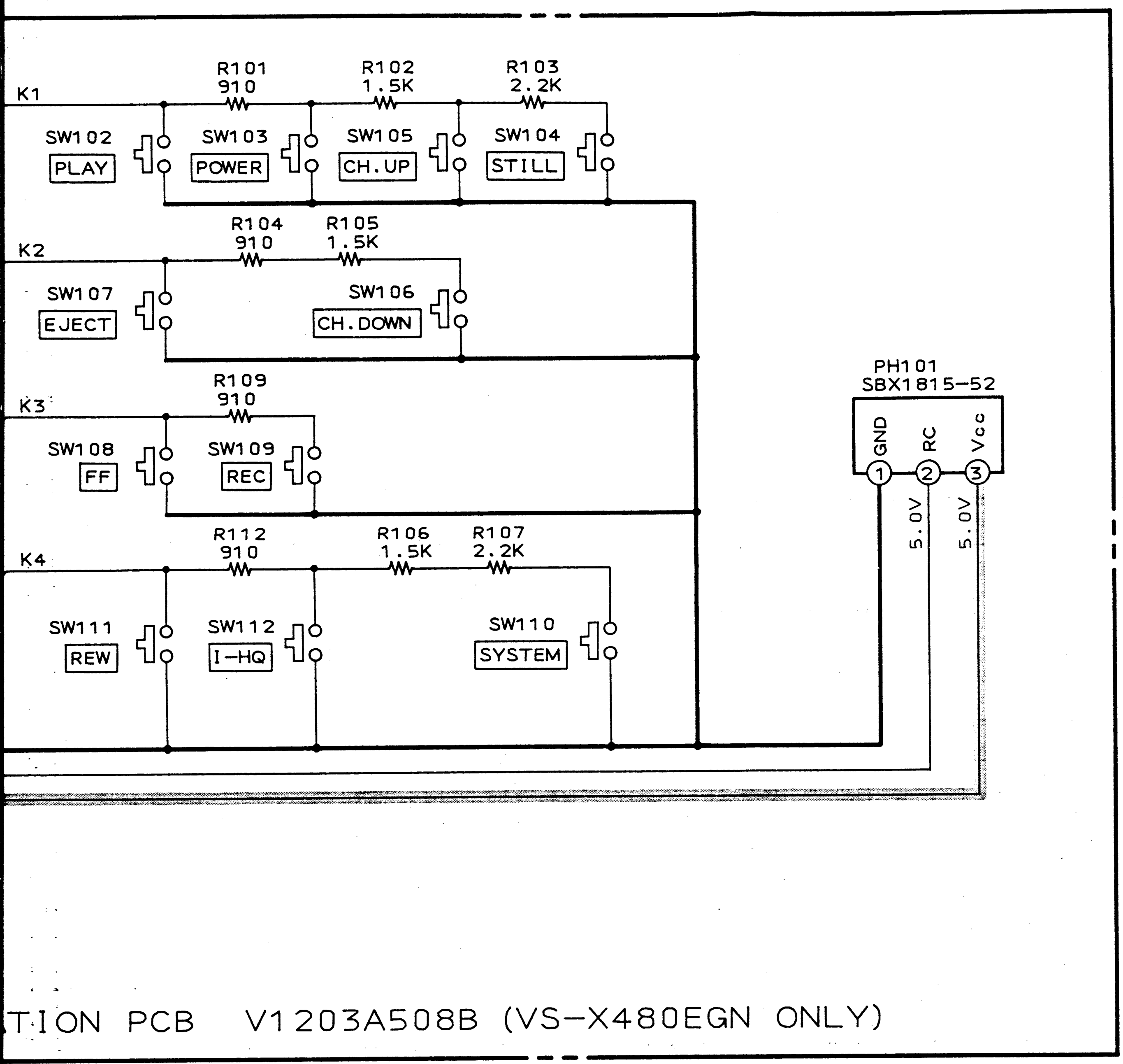
OPERATION PCB V1203A508B (VS-X480EGN)


V1203A5070
94V0
POWER
SW3
PLAY SW2
EJECT SW7
SW5
SW6
CH UP
CH DOWN
FF
SW8
REW SW11
R7
R6
R12
R9
R5
R4
R2
R1
R3
SW9
REC
SW12
I-HQ
SW4
STILL
SW10
SYSTEM
RESET
SW1
PH1
R14
P17
FL1
P16

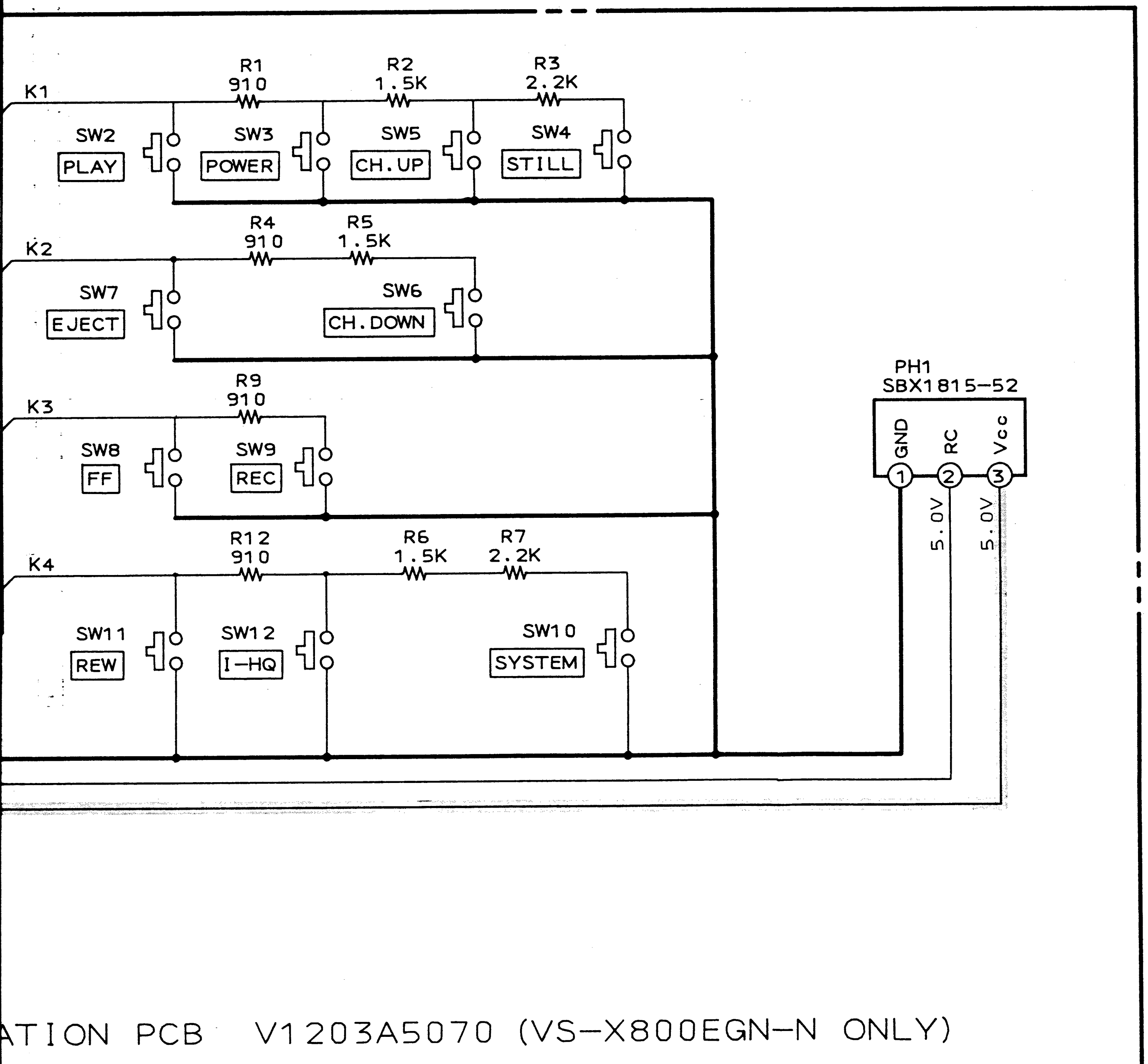
OPERATION PCB V1203A5070 (VS-X800EGN-N)



A
B
C
D
E
1
2
3
4
5
6
7
8
P117
TO MAIN PCB (2/3) P517
1 S0
2 S1
3 S2
4 S3
5 S4
6 S5
7 S6
8 S7
9 S8
10 S9
11 S10
12 S11
13 S12
14 N.C
FL101:FV662G
FL− FL− S12 S11 S10 S9 S8 S7 S6 S5 S4 S3 S2 S1 S0
35 34 32 31 30 29 28 27 26 25 24 23 22 21 20
NP T7 T6 T5 T4 T3 T2 T1 T0
12 11 10 9 8 7 6 5 4
FL+ FL+
2 1
K1
SW102
PLAY
K2
SW107
EJECT
K3
SW108
FF
K4
SW111
REW
P116
TO MAIN PCB (2/3) P516
1 REMOCON
2 N.C
3 N.C
4 T0
5 T1
6 T2
7 T3
8 T4
9 T5
10 T6
11 T7
12 RESET
13 N.C
14 IDL5V
15 K4
16 K3
17 K2
18 K1
19 BU.GND
20 FL−
21 FL+
22 D.GND
RESET
SW101
R114
10
OPERATION PC
P16
TO MAIN PCB (2/3) P517
1 S0
2 S1
3 S2
4 S3
5 S4
6 S5
7 S6
8 S7
9 S8
10 S9
11 S10
12 S11
13 S12
14 N.C
FL1:FV663G
FL− FL− S12 S11 S10 S9 S8 S7 S6 S5 S4 S3 S2 S1 S0
43 42 39 38 37 36 35 34 33 32 31 30 29 28 27
T9 T8 T7 T6 T5 T4 T3 T2 T1 T0
14 13 12 11 10 9 8 7 6 5
FL+ FL+
2 1
K1
SW2
PLAY
K2
SW7
EJECT
K3
SW8
FF
K4
SW11
REW
P17
TO MAIN PCB (2/3) P516
1 REMOCON
2 T0
3 T1
4 T2
5 T3
6 T4
7 T5
8 T6
9 T7
10 T8
11 T9
12 RESET
13 N.C
14 IDL5V
15 K4
16 K3
17 K2
18 K1
19 BU.GND
20 FL−
21 FL+
22 D.GND
RESET
SW1
R14
5.1
OPERATION P


K1
R101 910
R102 1.5K
R103 2.2K
SW102 PLAY
SW103 POWER
SW105 CH.UP
SW104 STILL
K2
R104 910
R105 1.5K
SW107 EJECT
SW106 CH.DOWN
K3
R109 910
SW108 FF
SW109 REC
K4
R112 910
R106 1.5K
R107 2.2K
SW111 REW
SW112 I-HQ
SW110 SYSTEM
PH101
SBX1815-52
GND
RC
Vcc
①
②
③
5.0V
5.0V

TION PCB V1203A508B (VS-X480EGN ONLY)


K1
R1 910
R2 1.5K
R3 2.2K
SW2 PLAY
SW3 POWER
SW5 CH.UP
SW4 STILL
K2
R4 910
R5 1.5K
SW7 EJECT
SW6 CH.DOWN
K3
R9 910
SW8 FF
SW9 REC
K4
R12 910
R6 1.5K
R7 2.2K
SW11 REW
SW12 I-HQ
SW10 SYSTEM
PH1
SBX1815-52
GND
RC
Vcc
①
②
③
5.0V
5.0V

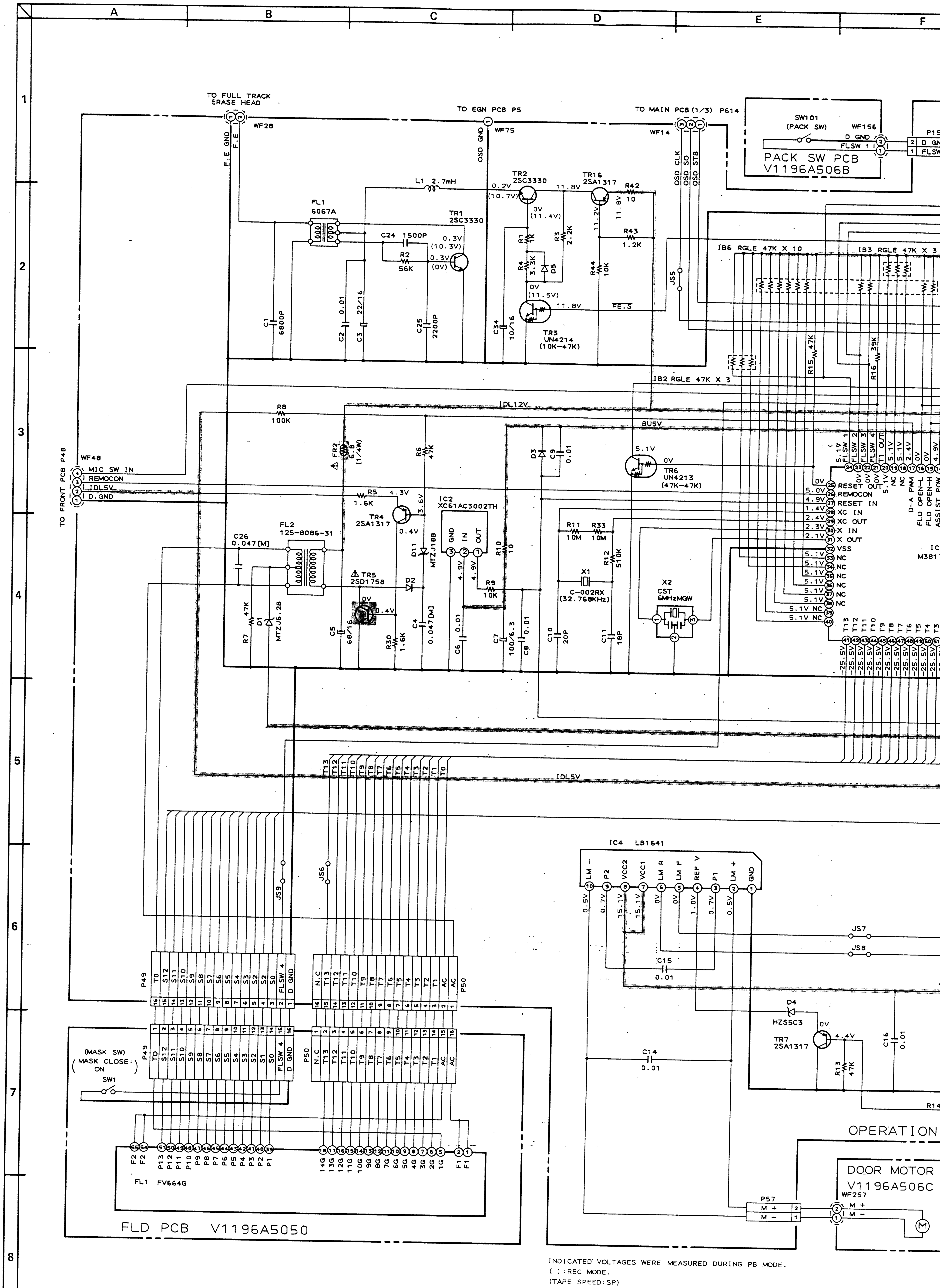
TION PCB V1203A5070 (VS-X800EGN-N ONLY)

*INDICATED VOLTAGES WERE
MEASURED DURING E-E MODE.

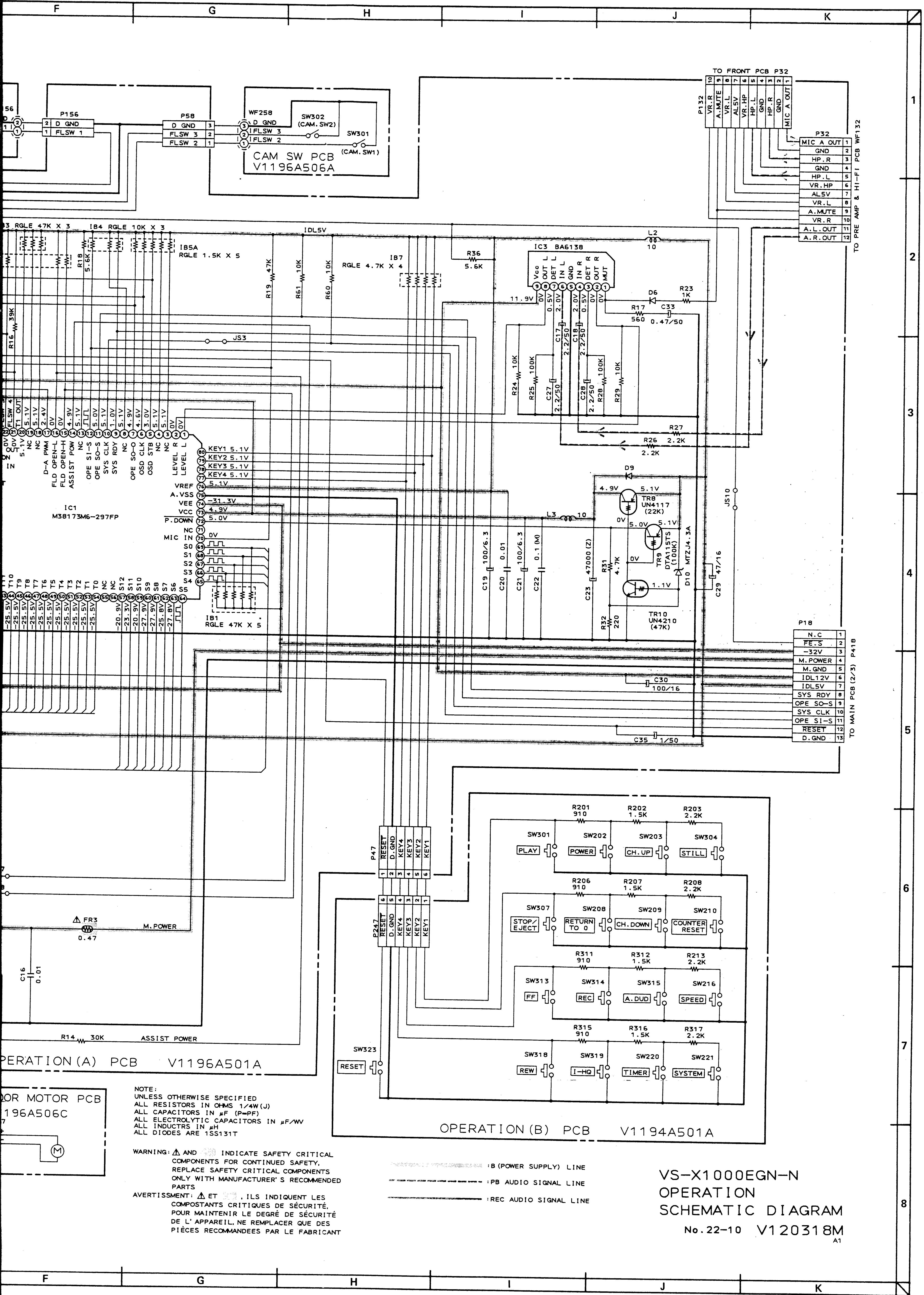
▨ :B (POWER SUPPLY) LINE

NOTE;
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)

VS-X480EGN
VS-X800EGN-N
OPERATION
SCHEMATIC DIAGRAMS
No.22-9 V120317M
A2


A
B
C
D
E
F
1
2
3
4
5
6
7
8
TO FULL TRACK ERASE HEAD
F.E GND
F.E
WF28
TO EGN PCB P5
OSD GND
WF75
TO MAIN PCB (1/3) P614
WF14
OSD CLK
OSD SO
OSD STB
SW101
(PACK SW)
WF156
D GND
FLSW 1
PACK SW PCB
V1196A506B
L1 2.7mH
FL1
6067A
TR1
2SC3330
TR2
2SC3330
TR16
2SA1317
TR3
UN4214
(10K-47K)
C24 1500P
R2
56K
C1
6800P
C2 0.01
C3 22/16
C25
2200P
C34
10/16
R1
1K
R3
2.2K
R4
3.3K
D5
R42
10
R43
1.2K
R44
10K
FE.S
JS5
IB6 RGLE 47K X 10
IB3 RGLE 47K X 3
IB2 RGLE 47K X 3
R15
47K
R16
39K
TO FRONT PCB P48
WF48
MIC SW IN
REMOCON
IDL5V
D.GND
R8
100K
IDL12V
FR2
6.8
(1/4W)
R6
47K
R5
1.6K
TR4
2SA1317
D11
MTZJ18B
IC2
XC61AC3002TH
GND
IN
OUT
R10
10
BUSV
D3
C9
0.01
TR6
UN4213
(47K-47K)
FL2
125-8086-31
C26
0.047(M)
TR5
2SD1758
D2
R9
10K
R11
10M
R33
10M
R12
510K
X1
C-002RX
(32.768KHz)
X2
CST
6MHzMGW
R7
47K
D1
MTZJ6.2B
C5
68/16
R30
1.6K
C4
0.047(M)
C6
0.01
C7
100/6.3
C8
0.01
C10
20P
C11
18P
RESET OUT
REMOCON
RESET IN
XC IN
XC OUT
X IN
X OUT
VSS
NC
FLSW 1
FLSW 2
FLSW 3
FLSW 4
T1 OUT
D-A PWM
FLD OPEN-L
FLD OPEN-H
ASSIST POW
IC
M381
T13 T12 T11 T10 T9 T8 T7 T6 T5 T4 T3
IDL5V
T13 T12 T11 T10 T9 T8 T7 T6 T5 T4 T3 T2 T1 T0
JS6
JS9
IC4 LB1641
LM -
P2
VCC2
VCC1
LM R
LM F
REF V
P1
LM +
GND
JS7
JS8
C15
0.01
C14
0.01
D4
HZS5C3
TR7
2SA1317
R13
47K
C16
0.01
P49
T0 S12 S11 S10 S9 S8 S7 S6 S5 S4 S3 S2 S0 FLSW 4 D GND
P50
N.C T13 T12 T11 T10 T9 T8 T7 T6 T5 T4 T3 T2 T1 AC AC
(MASK SW)
(MASK CLOSE: ON)
SW1
F2 F2 P13 P12 P11 P10 P9 P8 P7 P6 P5 P4 P3 P2 P1
14G 13G 12G 11G 10G 9G 8G 7G 6G 5G 4G 3G 2G 1G F1 F1
FL1 FV664G
FLD PCB V1196A5050
OPERATION
DOOR MOTOR
V1196A506C
P57
WF257
M +
M -
M

INDICATED VOLTAGES WERE MEASURED DURING PB MODE.
( ) : REC MODE.
(TAPE SPEED: SP)


F
G
H
I
J
K
1
2
3
4
5
6
7
8
P156
D GND
FLSW 1
P58
D GND
FLSW 3
FLSW 2
WF258
SW302
(CAM. SW2)
SW301
(CAM. SW1)
CAM SW PCB
V1196A506A
TO FRONT PCB P32
P132
VR.R
A.MUTE
VR.L
AL5V
VR.HP
HP.L
GND
HP.R
GND
MIC A OUT
P32
TO PRE AMP & HI-FI PCB WF132
A.L.OUT
A.R.OUT
IB3 RGLE 47K X 3
IB4 RGLE 10K X 3
IB5A
RGLE 1.5K X 5
IDL5V
IB7
RGLE 4.7K X 4
R36
5.6K
L2
10
IC3 BA6138
Vcc
OUT L
DET L
IN L
GND
IN R
DET R
OUT R
MUT
11.9V
D6
R23
1K
R17
560
C33
0.47/50
R19 47K
R61 10K
R60 10K
R18 5.6K
R16 39K
JS3
C17 2.2/50
C18 2.2/50
R24 10K
R25 100K
C27 2.2/50
C28 2.2/50
R28 100K
R29 10K
R27
2.2K
R26
2.2K
KEY1 5.1V
KEY2 5.1V
KEY3 5.1V
KEY4 5.1V
VREF
A.VSS
VEE
VCC
P.DOWN
MIC IN
S0
S1
S2
S3
S4
-31.3V
4.9V
5.0V
IC1
M38173M6-297FP
IB1
RGLE 47K X 5
D9
TR8
UN4117
(22K)
L3 10
TR9
DTA115TS
(100K)
D10 MTZJ4.3A
R31 4.7K
C19 100/6.3
C20 0.01
C21 100/6.3
C22 0.1 (M)
C23 47000 (Z)
R32 220
TR10
UN4210
(47K)
C29 47/16
JS10
P18
N.C
FE.S
-32V
M.POWER
M.GND
IDL12V
IDL5V
SYS RDY
OPE SO-S
SYS CLK
OPE SI-S
RESET
D.GND
TO MAIN PCB (2/3) P418
C30
100/16
C35
1/50
⚠ FR3
0.47
M.POWER
C16
0.01
R14 30K
ASSIST POWER
OPERATION (A) PCB V1196A501A
DOOR MOTOR PCB
V1196A506C
M
P47
P247
RESET
D.GND
KEY4
KEY3
KEY2
KEY1
R201 910
R202 1.5K
R203 2.2K
SW301 PLAY
SW202 POWER
SW203 CH.UP
SW304 STILL
R206 910
R207 1.5K
R208 2.2K
SW307 STOP/EJECT
SW208 RETURN TO 0
SW209 CH.DOWN
SW210 COUNTER RESET
R311 910
R312 1.5K
R213 2.2K
SW313 FF
SW314 REC
SW315 A.DUD
SW216 SPEED
R315 910
R316 1.5K
R317 2.2K
SW323 RESET
SW318 REW
SW319 I-HQ
SW220 TIMER
SW221 SYSTEM
OPERATION (B) PCB V1194A501A
A1

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN µF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN µF/WV
ALL INDUCTRS IN µH
ALL DIODES ARE 1SS131T

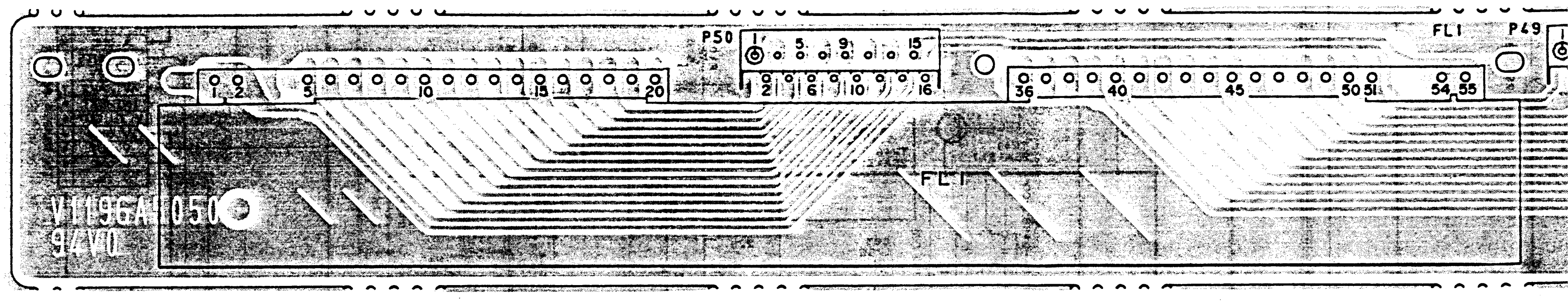
WARNING: ⚠ AND ▨ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET ▨, ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL. NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

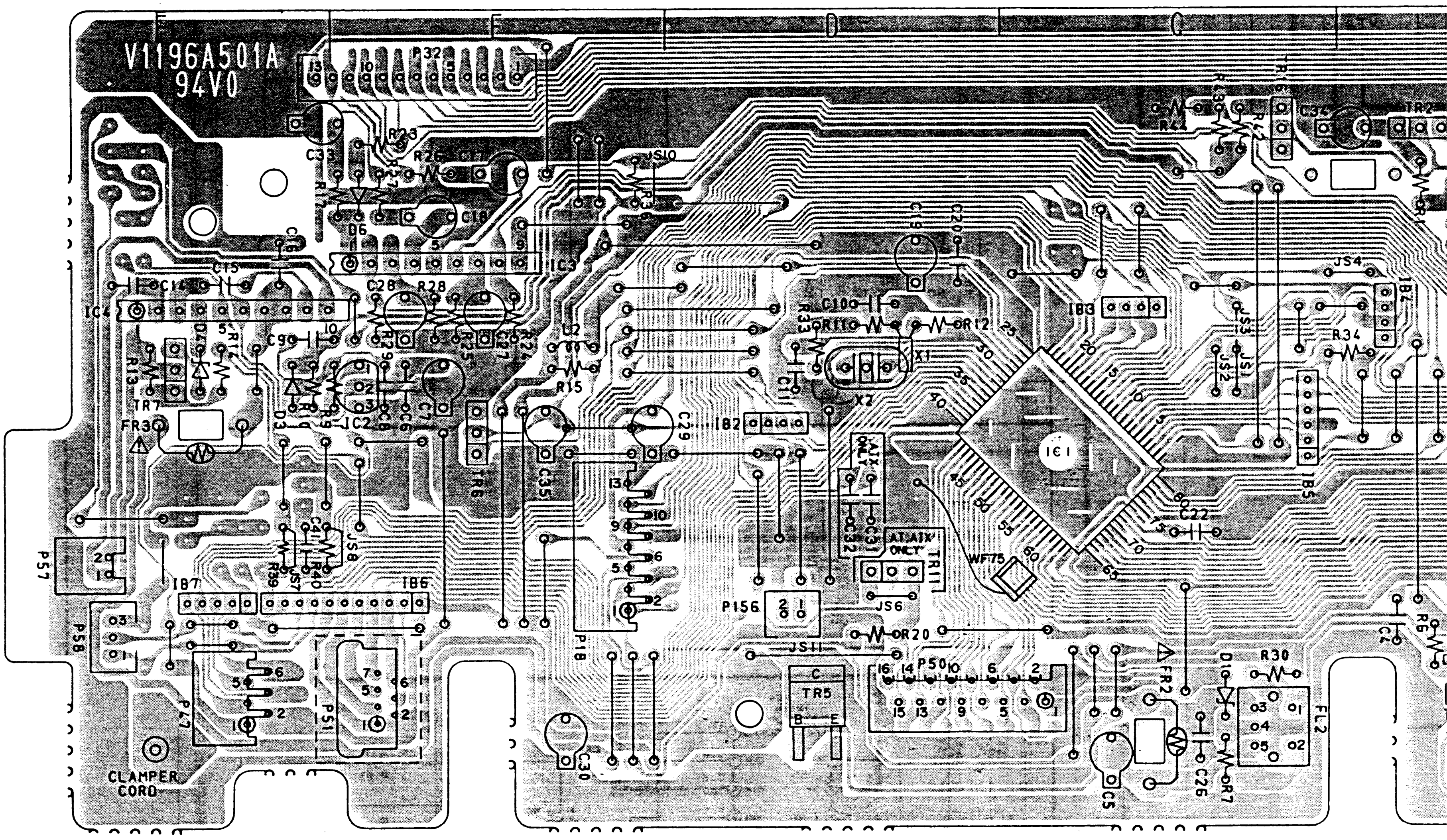
▨ :B (POWER SUPPLY) LINE
- - - - :PB AUDIO SIGNAL LINE
——— :REC AUDIO SIGNAL LINE

VS-X1000EGN-N
OPERATION
SCHEMATIC DIAGRAM

No.22-10 V120318M


V1196A5050
94V0
P50
P49
FL1

FLD PCB V1196A5050

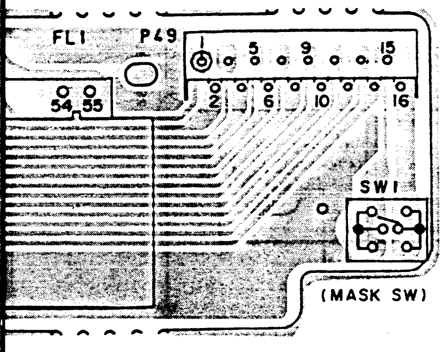

V1196A501A
94V0
P32
IC1
IC2
IC3
IC4
P50
P51
P156
P18
TR5
FR2
FR3
FL2
CLAMPER CORD

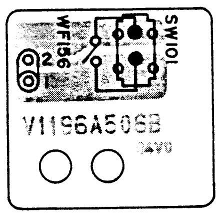
OPERATION(A) PCB V1196A501AJ2

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY.
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

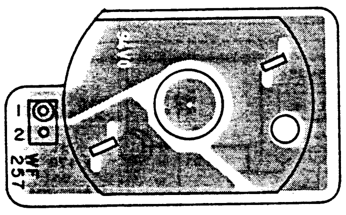
AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

NOTE : PARTS DIFFER
REFER TO SCH
PARTS INFORM

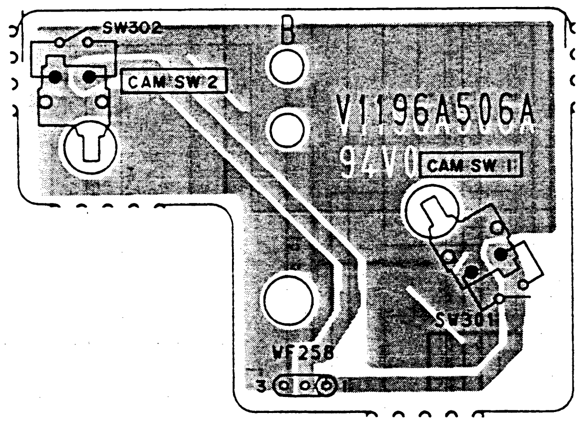

FL1
P49
54 55
1
5
9
15
2
6
10
16
SW1
(MASK SW)


SW101
WF156
V1196A506B
94V0

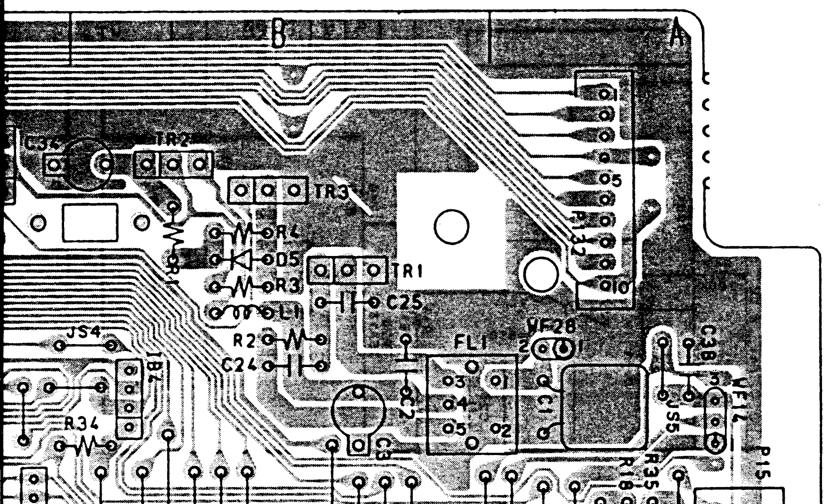
PACK SW PCB
V1196A506B J1



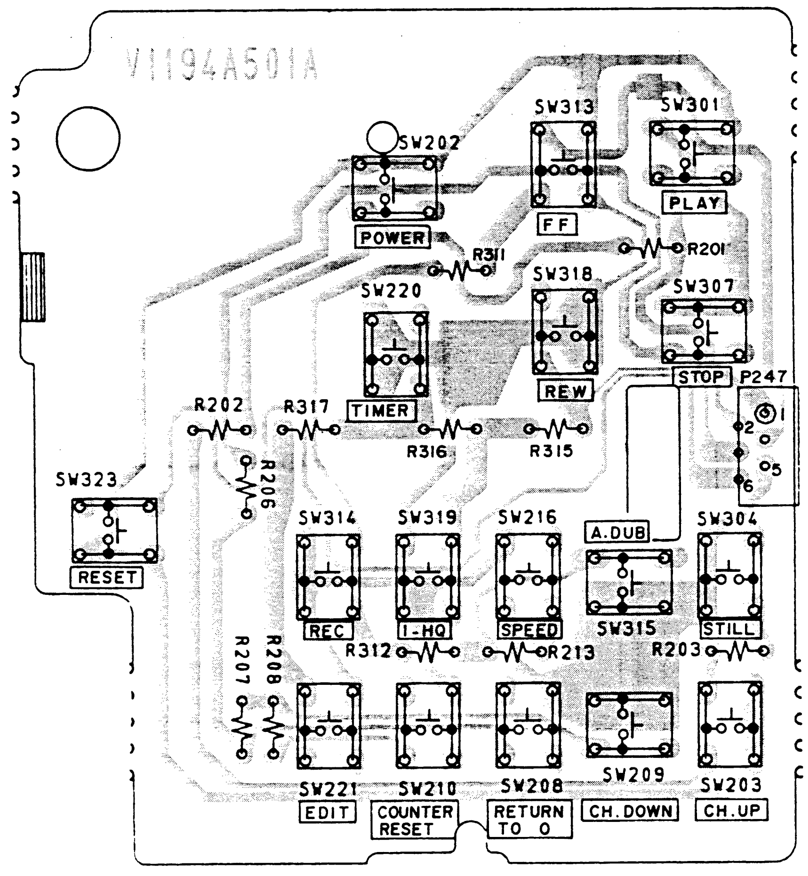
DOOR MOTOR PCB
V1196A506C J1


SW302
B
CAM SW 2
V1196A506A
94V0
CAM SW 1
SW301
WF258
3

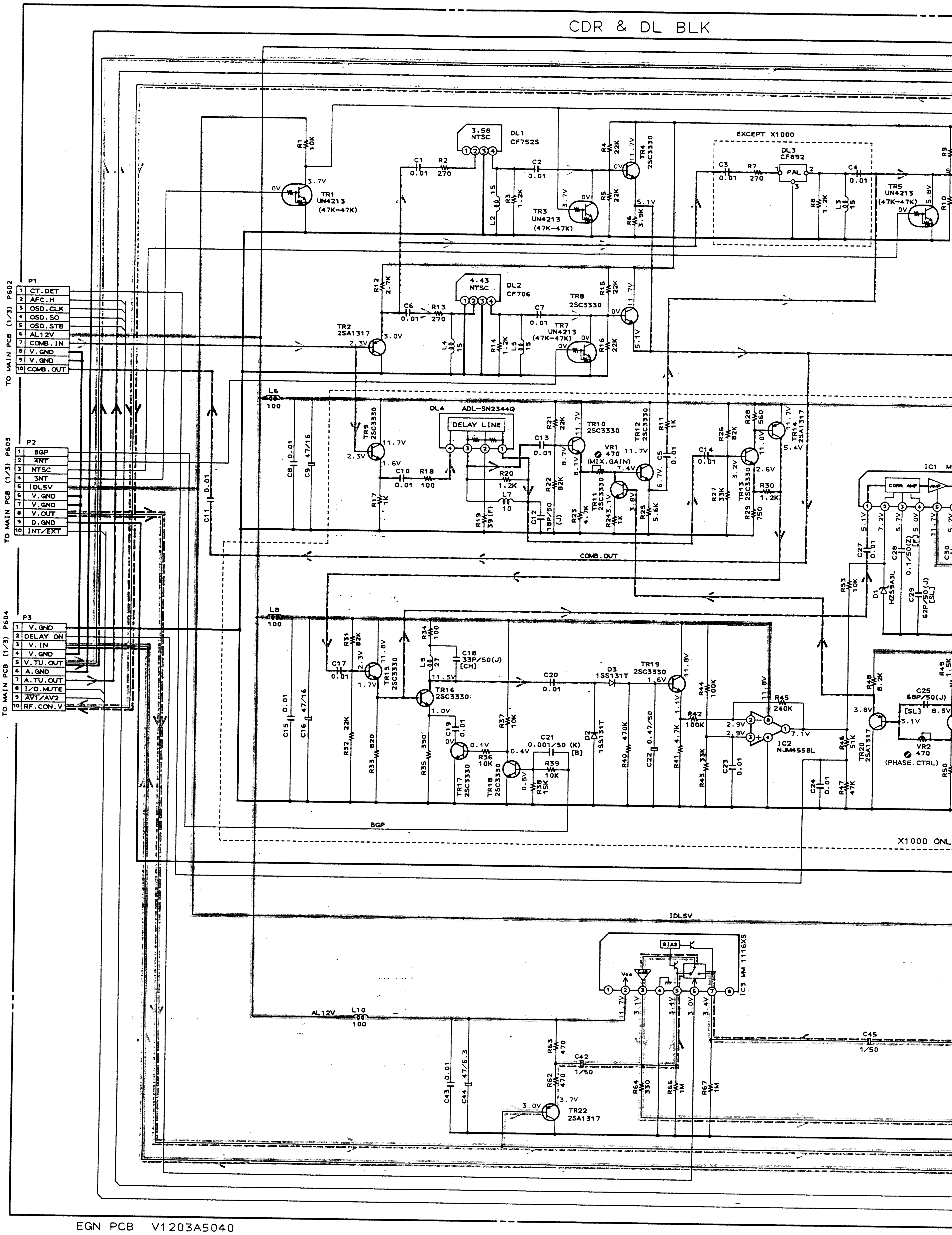
CAM SW PCB V1196A506A J1


B
A
TR2
TR3
TR1
R4
D5
R1
R3
L1
C25
R2
C24
JS4
WF28
FL1
C38
WF14
P15
R34
C1
C3
R18
R35
C39
C37
JS9
WF48
R19
R16
C23
R5
R8
D9
R6
C2
D2
D1
L3
C21
IB1
TR8
TR4
TR9
TR10
D10
R32
R31
P49
FL2
IB5

PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.

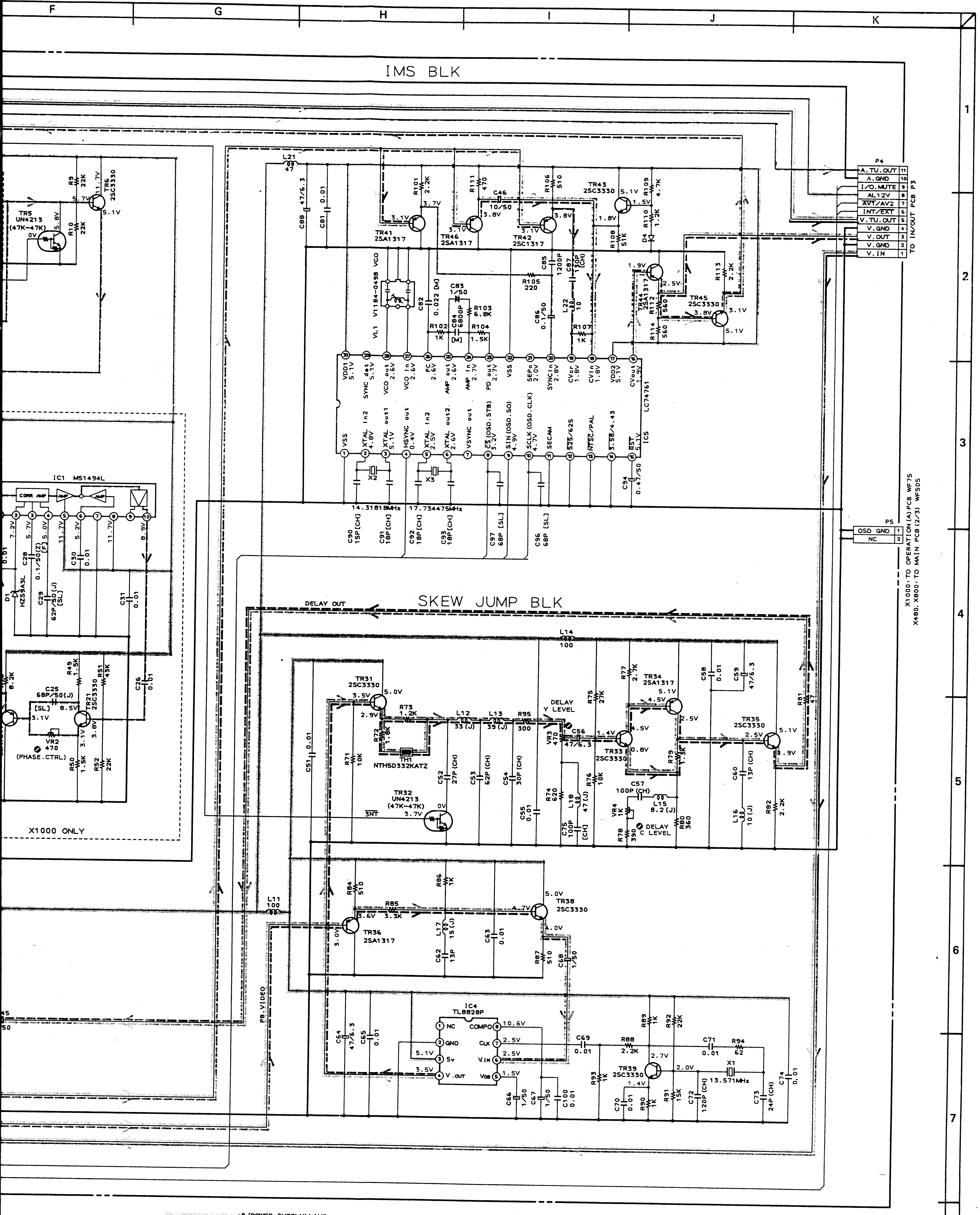

V1194A501A
SW202
POWER
SW313
FF
SW301
PLAY
R311
R201
SW220
SW318
REW
SW307
STOP
P247
TIMER
R202
R317
R316
R315
R206
SW323
RESET
SW314
REC
SW319
1-HQ
SW216
SPEED
A.DUB
SW315
SW304
STILL
R312
R213
R203
R207
R208
SW221
EDIT
SW210
COUNTER RESET
SW208
RETURN TO 0
SW209
CH.DOWN
SW203
CH.UP

OPERATION (B) PCB V1194A501A J2


CDR & DL BLK
TO MAIN PCB (1/3) P602
P1
1 CT.DET
2 AFC.H
3 OSD.CLK
4 OSD.SO
5 OSD.STB
6 AL12V
7 COMB.IN
8 V.GND
9 V.GND
10 COMB.OUT
TO MAIN PCB (1/3) P603
P2
1 BGP
2 4NT
3 NTSC
4 3NT
5 IDL5V
6 V.GND
7 V.GND
8 V.OUT
9 D.GND
10 INT/EXT
TO MAIN PCB (1/3) P604
P3
1 V.GND
2 DELAY ON
3 V.IN
4 V.GND
5 V.TU.OUT
6 A.GND
7 A.TU.OUT
8 I/O.MUTE
9 AVT/AV2
10 RF.CON.V
TR1 UN4213 (47K-47K)
R1 10K
DL1 CF752S
3.58 NTSC
C1 0.01
R2 270
C2 0.01
L2 15
R3 1.2K
TR3 UN4213 (47K-47K)
TR4 2SC3330
R4 22K
R5 22K
R6 3.9K
EXCEPT X1000
DL3 CF892
PAL
C3 0.01
R7 270
C4 0.01
R8 1.2K
L3 15
TR5 UN4213 (47K-47K)
DL2 CF706
4.43 NTSC
R12 2.7K
C6 0.01
R13 270
C7 0.01
TR2 2SA1317
L4 15
R14 1.2K
L5 15
TR7 UN4213 (47K-47K)
TR8 2SC3330
R15 22K
R16 22K
L6 100
C8 0.01
C9 47/16
DL4 ADL-SN2344Q
DELAY LINE
TR9 2SC3330
C10 0.01
R18 100
R17 1K
R20 1.2K
L7 10
R19 39(F)
C11 0.01
C13 0.01
R21 22K
R22 82K
C12 18P/50 (J)
TR10 2SC3330
VR1 470 (MIX.GAIN)
TR11 2SC3330
R23 4.7K
R24 1K
TR12 2SC3330
R25 5.6K
R11 1K
C5 0.01
C14 0.01
R26 82K
R27 33K
TR13 2SC3330
R28 560
R29 750
R30 1.2K
TR14 2SA1317
COMB.OUT
IC1
CORR AMP
C27 0.01
C28 0.1/50(Z) (F)
C29 62P/50(J) [SL]
D1 HZS9A3L
R53 10K
L8 100
C15 0.01
C16 47/16
C17 0.01
R31 82K
TR15 2SC3330
R32 22K
R33 820
L9 27
R34 100
C18 33P/50(J) [CH]
TR16 2SC3330
C19 0.01
R35 390
TR17 2SC3330
R36 10K
TR18 2SC3330
R37 10K
C21 0.001/50 (K) [B]
R38 15K
R39 10K
C20 0.01
D3 1SS131T
D2 1SS131T
TR19 2SC3330
R40 470K
C22 0.47/50
R41 4.7K
R44 100K
R42 100K
R43 33K
C23 0.01
R45 240K
IC2 NJM4558L
C24 0.01
R46 51K
R47 47K
TR20 2SA1317
R48 8.2K
C25 68P/50(J) [SL]
VR2 470 (PHASE.CTRL)
R49 1.5K
R50
BGP
X1000 ONL
IDL5V
BIAS
IC3 MM 1116XS
AL12V
L10 100
C43 0.01
C44 47/6.3
R63 470
R62 470
C42 1/50
TR22 2SA1317
R64 330
R66 1M
R67 1M
C45 1/50

EGN PCB V1203A5040

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS (J)
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV
ALL INDUCTORS IN μH (K)
ALL DIODES ARE 1SS131T



F
G
H
I
J
K
1
2
3
4
5
6
7
8
IMS BLK
SKEW JUMP BLK
P4
A.TU.OUT 11
A.GND 10
I/O.MUTE 9
AL12V 8
AVT/AV2 7
INT/EXT 6
V.TU.OUT 5
V.GND 4
V.OUT 3
V.GND 2
V.IN 1
TO IN/OUT PCB P3
P5
OSD GND 1
NC 2
X1000: TO OPERATION (A) PCB WF75
X480, X800: TO MAIN PCB (2/3) WF505
IC5 LC74761
VDD1 5.1V
SYNC det 5.1V
VCO out 2.6V
VCO In 2.6V
FC 2.6V
AMP out 2.6V
AMP In 2.7V
PD out 2.7V
VSS
SEPc 2.0V
SYNC In 2.8V
CVcr 1.8V
CVin 1.8V
VDD2 5.1V
CVout 1.9V
VSS
XTAL In2 4.8V
XTAL out1 5.1V
HSYNC out 0.4V
XTAL In2 2.5V
XTAL out2 2.6V
VSYNC out
CS (OSD.STB) 3.2V
SIN (OSD.SO) 4.9V
SCLK (OSD.CLK) 4.7V
SECAM
525/625
NTSC/PAL
3.58/4.43
RST 5.1V
VL1 V1184-0498 VCO
14.31818MHz
17.734475MHz
X2
X3
TR41 2SA1317
TR46 2SA1317
TR42 2SC1317
TR43 2SC3330
TR44 2SA1317
TR45 2SC3330
TR5 UN4213 (47K-47K)
TR6 2SC3330
IC1 M51494L
TR21 2SC3330
VR2 470 (PHASE.CTRL)
X1000 ONLY
DELAY OUT
TR31 2SC3330
TR32 UN4213 (47K-47K)
TR33 2SC3330
TR34 2SA1317
TR35 2SC3330
TH1 NTH5D332KATZ
DELAY Y LEVEL
VR3 470
VR4
DELAY C LEVEL
3NT
TR36 2SA1317
TR38 2SC3330
PB.VIDEO
IC4 TL8828P
NC
GND
5V
V.OUT
COMPO
CLK
V.IN
VOB
TR39 2SC3330
X1 13.571MHz
D1 HZS9A3L
D4
L21 47
L14 100
L11 100

:B (POWER SUPPLY) LINE
:PB Y SIGNAL LINE
:REC OR E-E Y SIGNAL LINE
:PB CHROMA SIGNAL LINE
:REC OR E-E CHROMA SIGNAL LINE
:AUDIO E-E SIGNAL LINE

INDICATED VOLTAGES WERE
MEASURED DURING PB MODE.
(TAPE USED:
PAL COLOUR BAR TAPE)

VS-X480EGN
VS-X800EGN-N
VS-X1000EGN-N
EGN
SCHEMATIC DIAGRAM
No.22-11 V120309M
A1

PRINCIPAL PARTS LOCATION

ICs

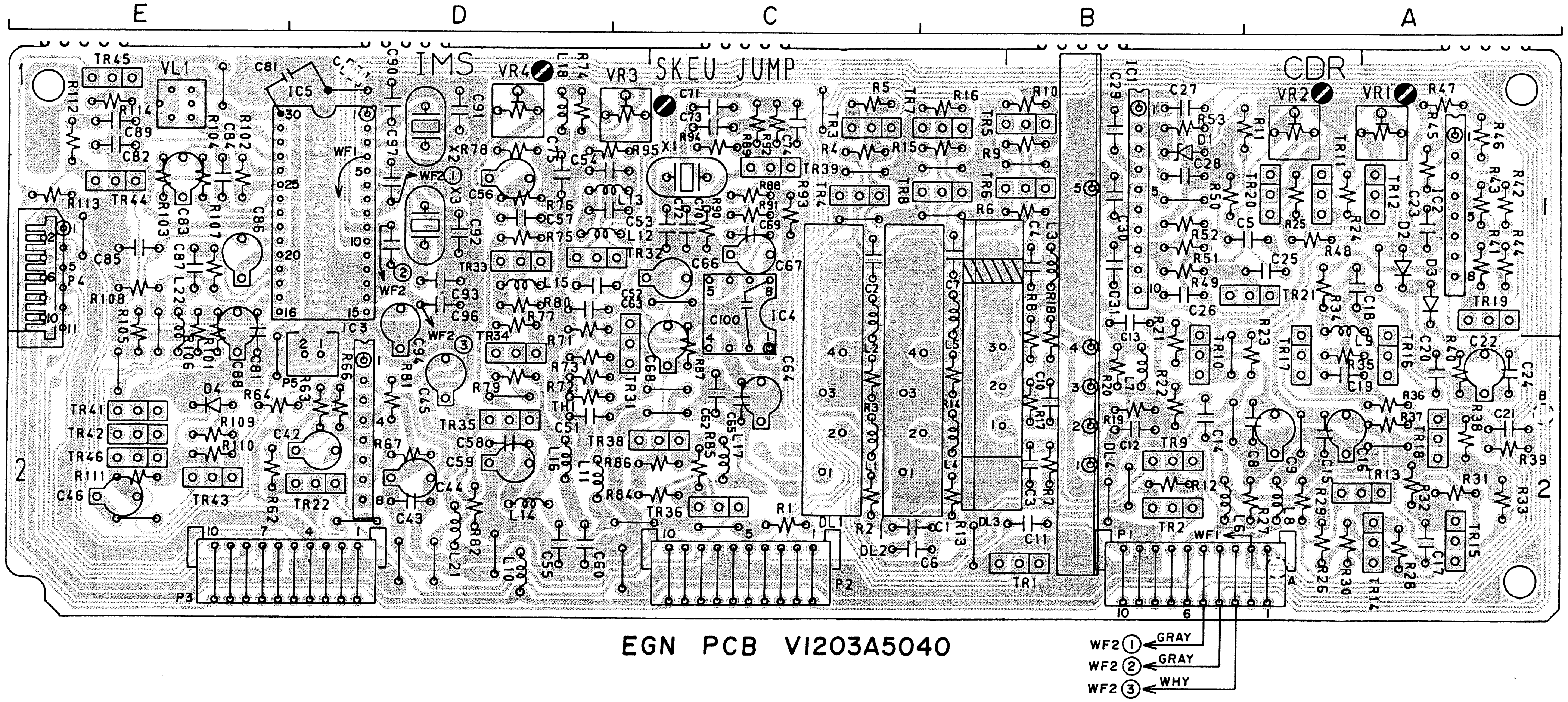
IC1	B1
IC2	A1
IC3	D2
IC4	C1
IC5	D1

TRANSISTORs

TR1	B2
TR2	B2
TR3	C1
TR4	C1
TR5	B1
TR6	B1
TR7	B1
TR8	B1
TR9	B2
TR10	B2
TR11	A1
TR12	A1
TR13	A2
TR14	A2
TR15	A2
TR16	A2
TR17	A2
TR18	A2
TR19	A1
TR20	A1
TR21	A,B1
TR22	D2
TR31	C1,2
TR32	D1
TR33	D1
TR34	D2
TR35	D2
TR36	C2
TR38	C2
TR39	C1
TR41	E2
TR42	E2
TR43	E2
TR44	E1
TR45	E1
TR46	E2

CONNECTORs

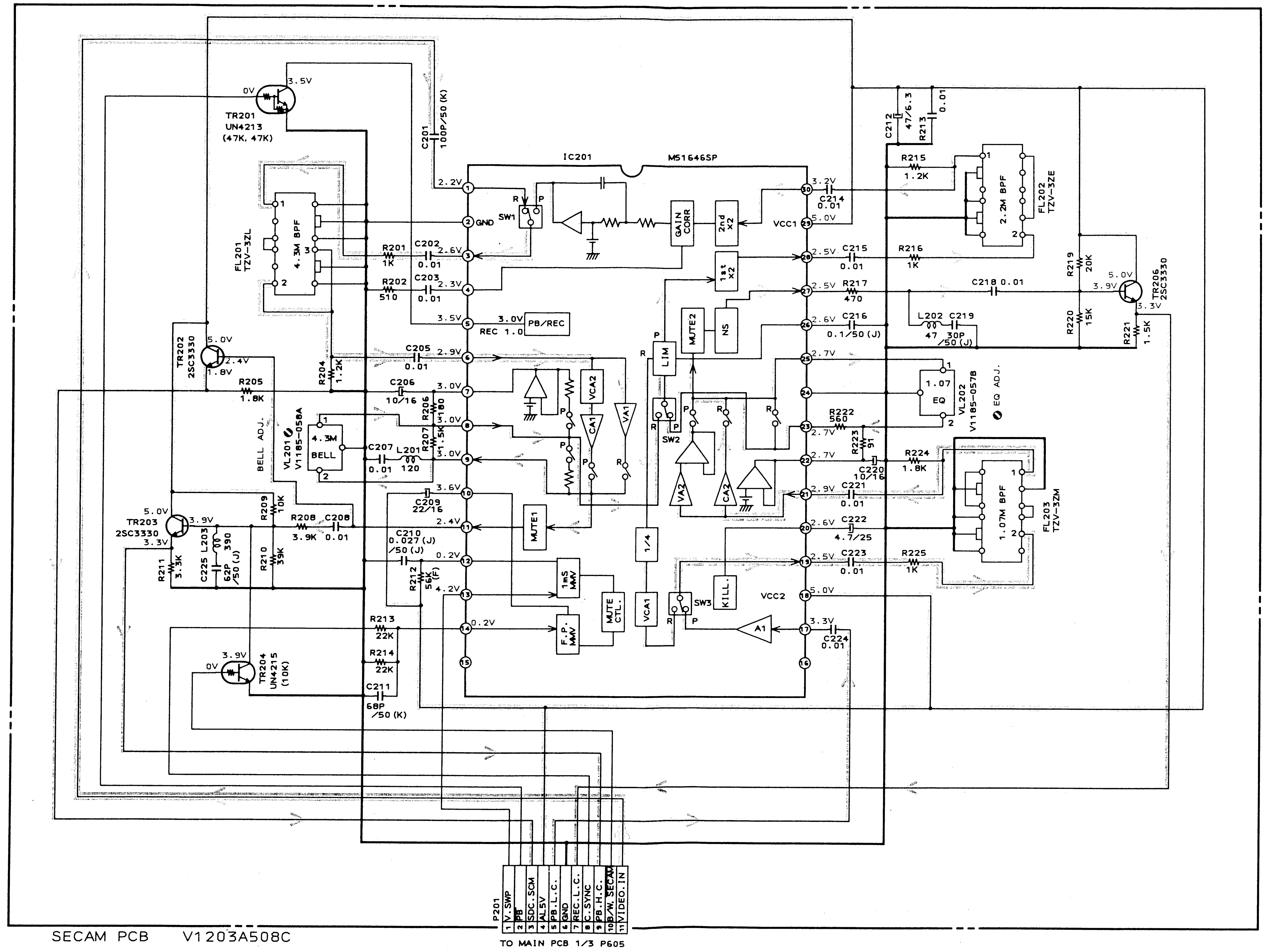
P1	B2
P2	C2
P3	D,E2
P4	E1
P5	D2


E
D
C
B
A
1
2
IMS
SKEU JUMP
CDR
IC1
IC3
IC4
IC5
P1
P2
P3
P4
P5
WF1
WF2 ① GRAY
WF2 ② GRAY
WF2 ③ WHY

EGN PCB V1203A5040

PATTERN CUT (A), (B), (C) & WF1, WF2
: X1000EGN-N ONLY

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT
PARTS INFORMATION.


IC201 M51646SP
TR201 UN4213 (47K, 47K)
TR202 2SC3330
TR203 2SC3330
TR204 UN4215 (10K)
TR206 2SC3330
FL201 TZV-3ZL 4.3M BPF
FL202 TZV-3ZE 2.2M BPF
FL203 TZV-3ZM 1.07M BPF
VL201 V1185-058A 4.3M BELL
BELL ADJ.
VL202 V1185-057B 1.07 EQ
EQ ADJ.
C201 100P/50 (K)
R201 1K
C202 0.01
R202 510
C203 0.01
C205 0.01
C206 10/16
R204 1.2K
R205 1.8K
R206 180
R207 1.5K
C207 0.01
L201 120
C209 22/16
R208 3.9K
C208 0.01
R209 10K
R210 39K
C210 0.027 (J) /50 (J)
R211 3.3K
C225 62P /50 (J)
L203 390
R212 56K (F)
R213 22K
R214 22K
C211 68P /50 (K)
C212 47/6.3
R213 0.01
R215 1.2K
C214 0.01
C215 0.01
R216 1K
C218 0.01
R217 470
R219 20K
C216 0.1/50 (J)
L202 47
C219 30P /50 (J)
R220 15K
R221 1.5K
R222 560
R223 91
C220 10/16
R224 1.8K
C221 0.01
C222 4.7/25
C223 0.01
R225 1K
C224 0.01
SW1
SW2
SW3
GAIN CORR
2nd x2
1st x2
MUTE2
NS
LIM
VCA2
VA1
CA1
VA2
CA2
MUTE1
1/4
1mS MMV
MUTE CTL.
F.P. MMV
VCA1
KILL.
A1
PB/REC
REC 1.0
VCC1
VCC2
GND
P201
1 V.SWP
2 PB
3 SDC.SCM
4 AL5V
5 PB.L.C.
6 GND
7 REC.L.C.
8 C.SYNC
9 PB.H.C.
10 B/W. SECAM
11 VIDEO.IN
TO MAIN PCB 1/3 P605
SECAM PCB V1203A508C

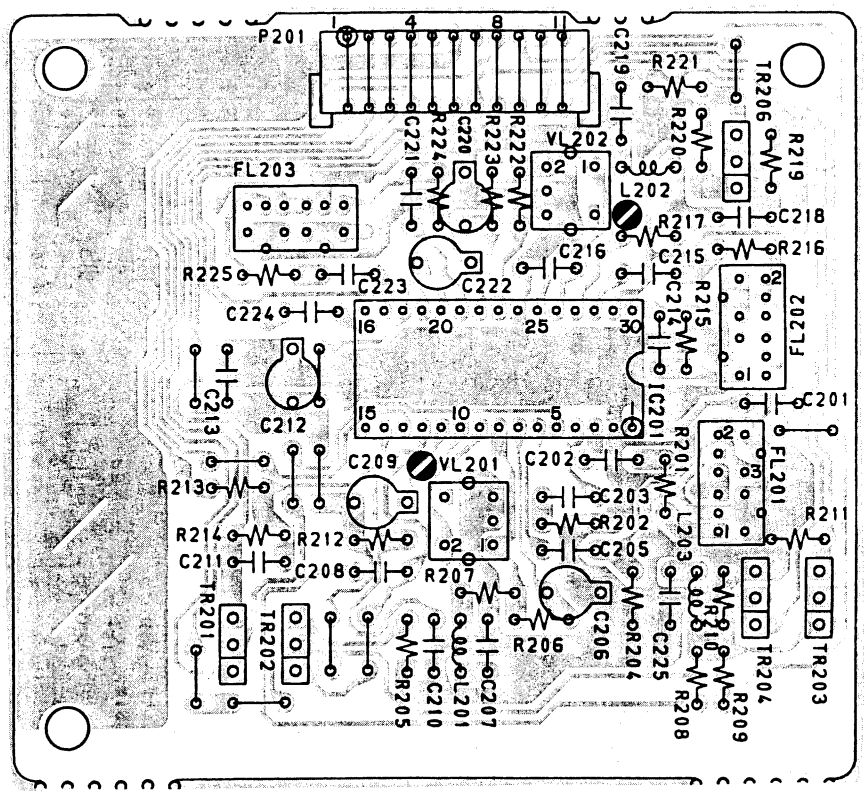
B (POWER SUPPLY) LINE
REC Y SIGNAL LINE
REC CHROMA SIGNAL LINE
PB CHROMA SIGNAL LINE

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/8W (J)
ALL CAPACITORS IN μF (P=PF) 16WV (N)
ALL ELECTROLYTIC CAPACITORS IN μF/WV (M)
ALL INDUCTORS IN μH (J)

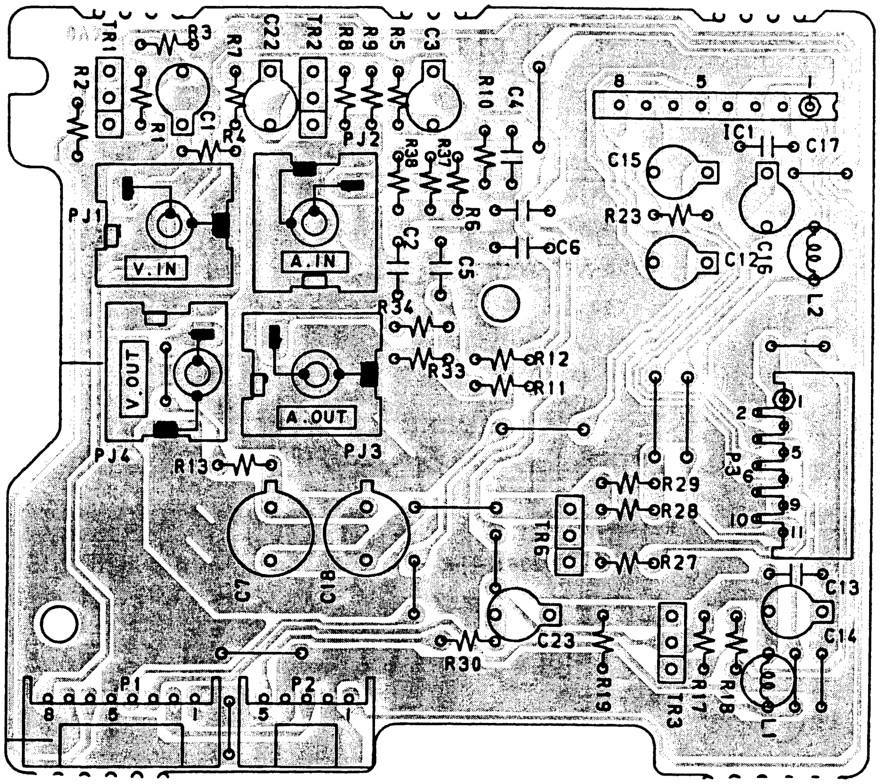
INDICATED VOLTAGES WERE MEASURED DURING PB MODE. (TAPE USED: SECAM RECORDED TAPE)

VS-X480EGN
SECAM
SCHEMATIC DIAGRAM

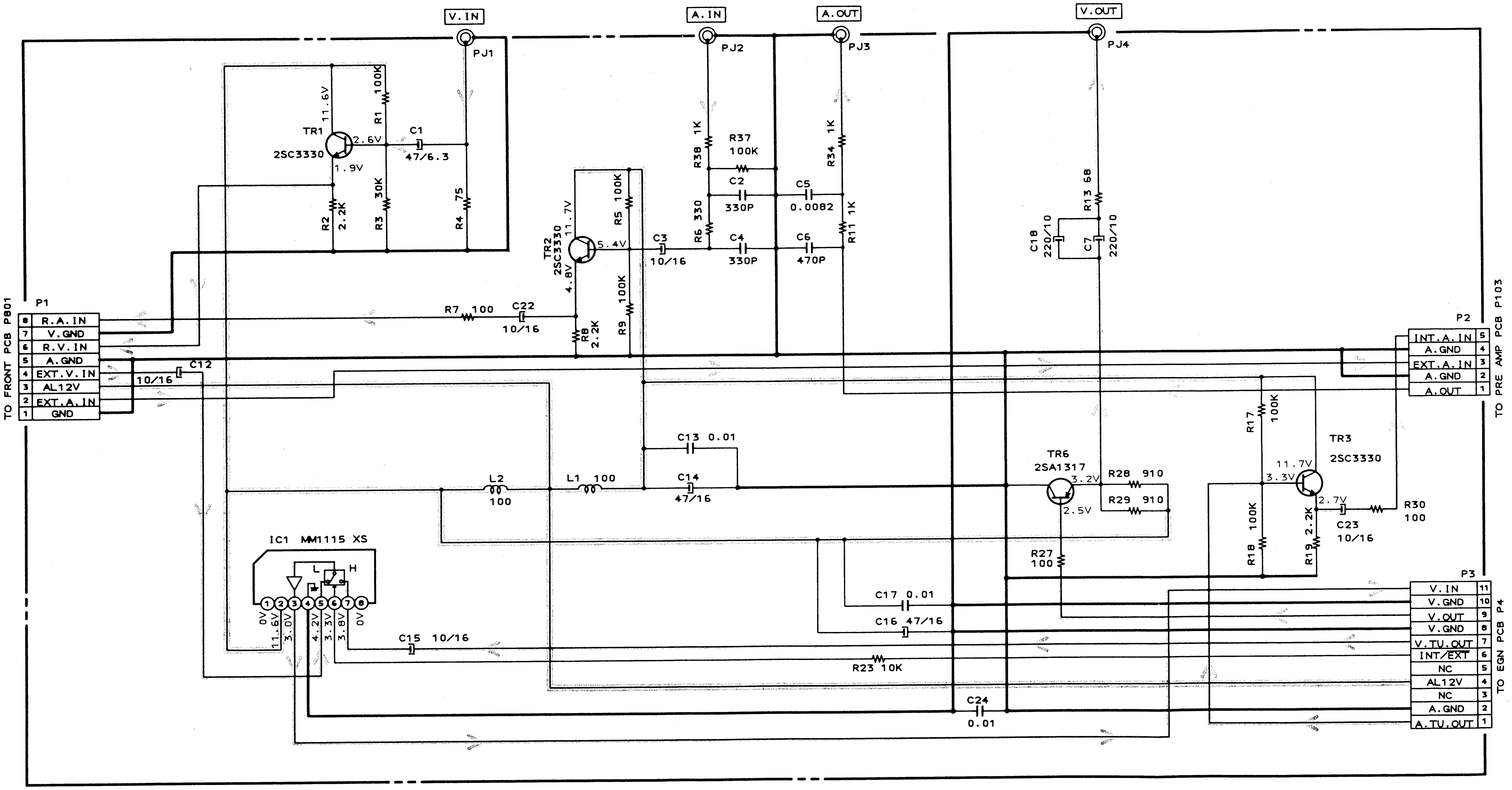
No.22-12 V120310M
A2


P201
1
4
8
11
C219
R221
TR206
R219
R220
VL202
C221
R224
C220
R223
R222
L202
FL203
R217
C218
R216
C216
C215
R225
C223
C222
R215
C214
FL202
C224
16
20
25
30
15
10
5
1
IC201
C213
C212
C201
R201
FL201
C209
VL201
C202
C203
R213
R202
R211
R214
R212
C205
L203
C211
C208
R207
TR201
TR202
R206
C206
R204
C225
R210
TR204
TR203
R205
C210
L201
C207
R208
R209

SECAM PCB V1203A508C


TR1
R3
R7
C22
TR2
R8
R9
R5
C3
R2
R1
C1
R4
PJ2
R10
C4
R38
R37
R6
C2
C5
C6
PJ1
V.IN
A.IN
R34
V.OUT
A.OUT
R33
R12
R11
PJ4
PJ3
R13
C7
C18
TR6
R29
R28
R27
C23
R30
R19
TR3
R17
R18
L1
C13
C14
P3
IC1
C17
C15
R23
C16
C12
L2
P1
P2
8
5
1
2
6
9
10
11

IN/OUT PCB V1203A508A


V.IN
PJ1
A.IN
PJ2
A.OUT
PJ3
V.OUT
PJ4
TR1
2SC3330
11.6V
2.6V
1.9V
R1 100K
C1 47/6.3
R2 2.2K
R3 30K
R4 75
TR2 2SC3330
11.7V
5.4V
4.8V
R5 100K
R9 100K
R8 2.2K
R7 100
C22 10/16
C3 10/16
R38 1K
R37 100K
C2 330P
C5 0.0082
R6 330
C4 330P
C6 470P
R34 1K
R11 1K
R13 68
C18 220/10
C7 220/10
P1
8 R.A.IN
7 V.GND
6 R.V.IN
5 A.GND
4 EXT.V.IN
3 AL12V
2 EXT.A.IN
1 GND
TO FRONT PCB P801
C12 10/16
C13 0.01
L2 100
L1 100
C14 47/16
TR6 2SA1317
3.2V
2.5V
R28 910
R29 910
R27 100
R17 100K
TR3 2SC3330
11.7V
3.3V
2.7V
R18 100K
R19 2.2K
C23 10/16
R30 100
P2
INT.A.IN 5
A.GND 4
EXT.A.IN 3
A.GND 2
A.OUT 1
TO PRE AMP PCB P103
IC1 MM1115 XS
L
H
1 2 3 4 5 6 7 8
0V
11.6V
3.0V
4.2V
3.3V
3.8V
0V
C15 10/16
C17 0.01
C16 47/16
R23 10K
C24 0.01
P3
V.IN 11
V.GND 10
V.OUT 9
V.GND 8
V.TU.OUT 7
INT/EXT 6
NC 5
AL12V 4
NC 3
A.GND 2
A.TU.OUT 1
TO EGN PCB P4

IN/OUT PCB V1203A508A

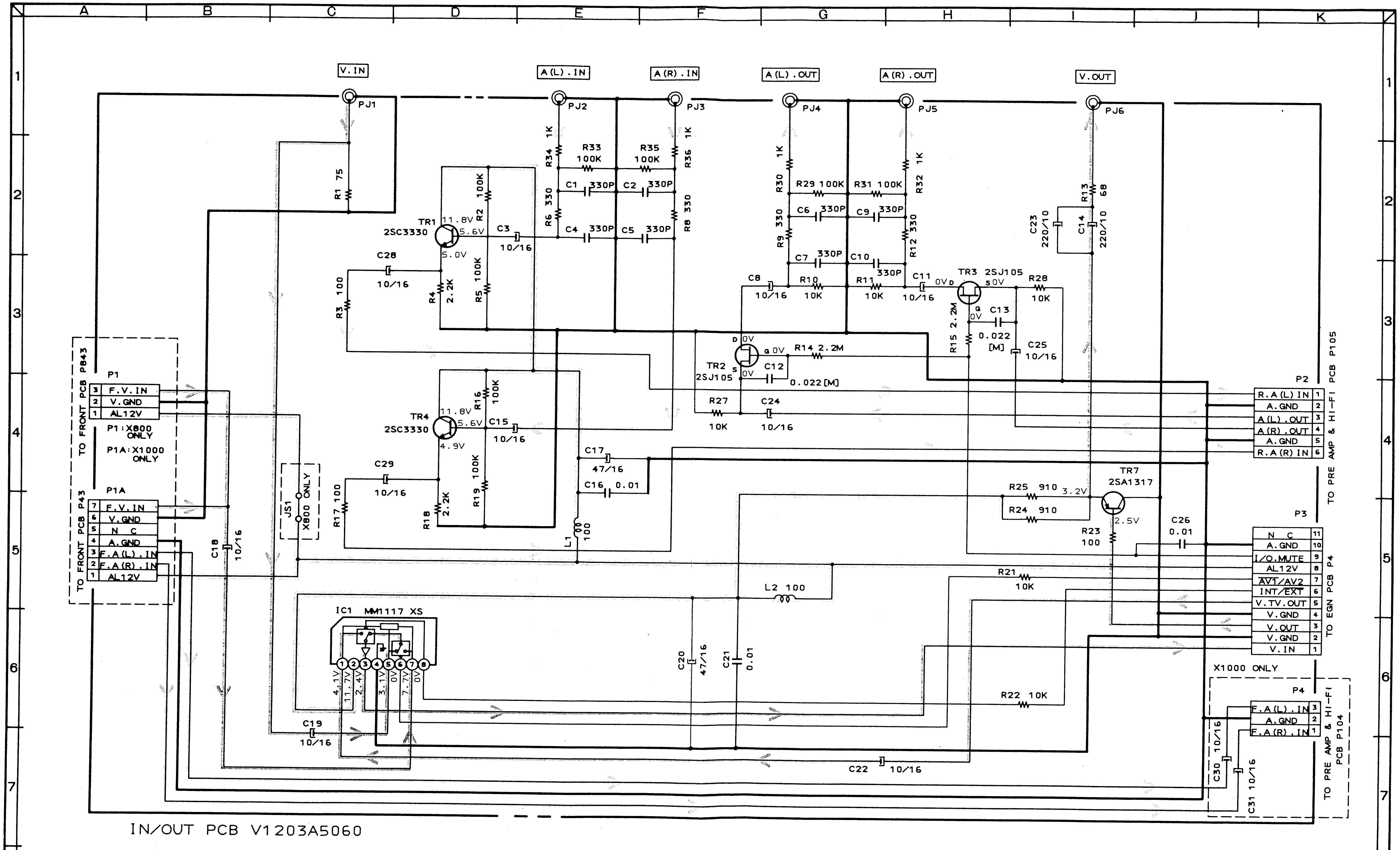
NOTE;
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN µF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN µF/WV
ALL INDUCTORS IN µH (K)

INDICATED VOLTAGES WERE
MEASURED DURING E-E MODE.

▬ :B (POWER SUPPLY) LINE
- - - :AUDIO OUT SIGNAL LINE
▬ :AUDIO IN SIGNAL LINE
- - - :VIDEO OUT SIGNAL LINE
▬ :VIDEO IN SIGNAL LINE

VS–X480EGN
IN/OUT
SCHEMATIC DIAGRAM

No.22–13 V120311M A2



A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8
V.IN
PJ1
A(L).IN
PJ2
A(R).IN
PJ3
A(L).OUT
PJ4
A(R).OUT
PJ5
V.OUT
PJ6
R1 75
R34 1K
R33 100K
R35 100K
R36 1K
R6 330
R8 330
C1 330P
C2 330P
C4 330P
C5 330P
TR1 2SC3330
11.8V
5.6V
5.0V
R2 100K
C3 10/16
C28 10/16
R3 100
R4 2.2K
R5 100K
R30 1K
R29 100K
R31 100K
R32 1K
R9 330
R12 330
C6 330P
C9 330P
C7 330P
C10 330P
C8 10/16
R10 10K
R11 10K
C11 10/16
TR3 2SJ105
R28 10K
R15 2.2M
C13 0.022 [M]
C25 10/16
R13 68
C23 220/10
C14 220/10
TR2 2SJ105
R14 2.2M
C12 0.022[M]
R27 10K
C24 10/16
P1
F.V.IN
V.GND
AL12V
P1:X800 ONLY
P1A:X1000 ONLY
TO FRONT PCB P843
P1A
F.V.IN
V.GND
N C
A.GND
F.A(L).IN
F.A(R).IN
AL12V
TO FRONT PCB P43
TR4 2SC3330
11.8V
5.6V
4.9V
R16 100K
C15 10/16
C29 10/16
R17 100
R18 2.2K
R19 100K
C17 47/16
C16 0.01
L1 100
JS1 X800 ONLY
C18 10/16
P2
R.A(L).IN
A.GND
A(L).OUT
A(R).OUT
A.GND
R.A(R).IN
TO PRE AMP & HI-FI PCB P105
TR7 2SA1317
R25 910
R24 910
3.2V
2.5V
R23 100
C26 0.01
P3
N C
A.GND
I/O.MUTE
AL12V
AVT/AV2
INT/EXT
V.TV.OUT
V.GND
V.OUT
V.GND
V.IN
TO EGN PCB P4
R21 10K
L2 100
C20 47/16
C21 0.01
IC1 MM1117 XS
4.1V
11.7V
2.4V
3.1V
0V
7.7V
0V
C19 10/16
R22 10K
C22 10/16
X1000 ONLY
P4
F.A(L).IN
A.GND
F.A(R).IN
TO PRE AMP & HI-FI PCB P104
C30 10/16
C31 10/16
IN/OUT PCB V1203A5060

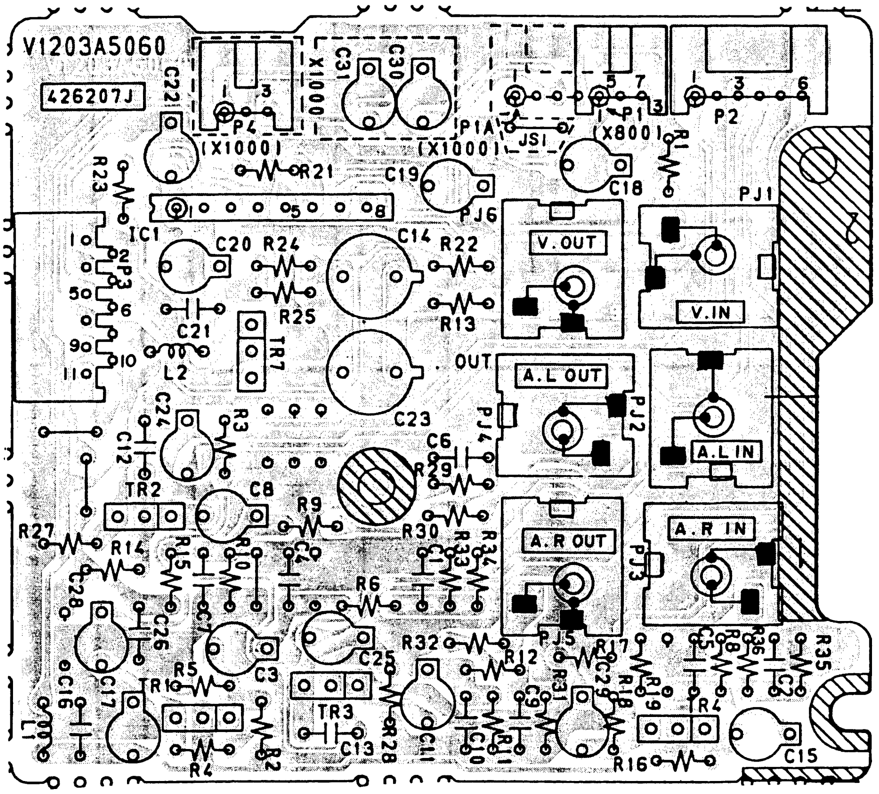
: B (POWER SUPPLY) LINE
: AUDIO OUT SIGNAL LINE
: AUDIO IN SIGNAL LINE
: VIDEO OUT SIGNAL LINE
: VIDEO IN SIGNAL LINE

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV
ALL INDUCTORS IN μH (K)
ALL DIODES ARE 1SS131

INDICATED VOLTAGES WERE
MEASURED DURING E-E MODE.

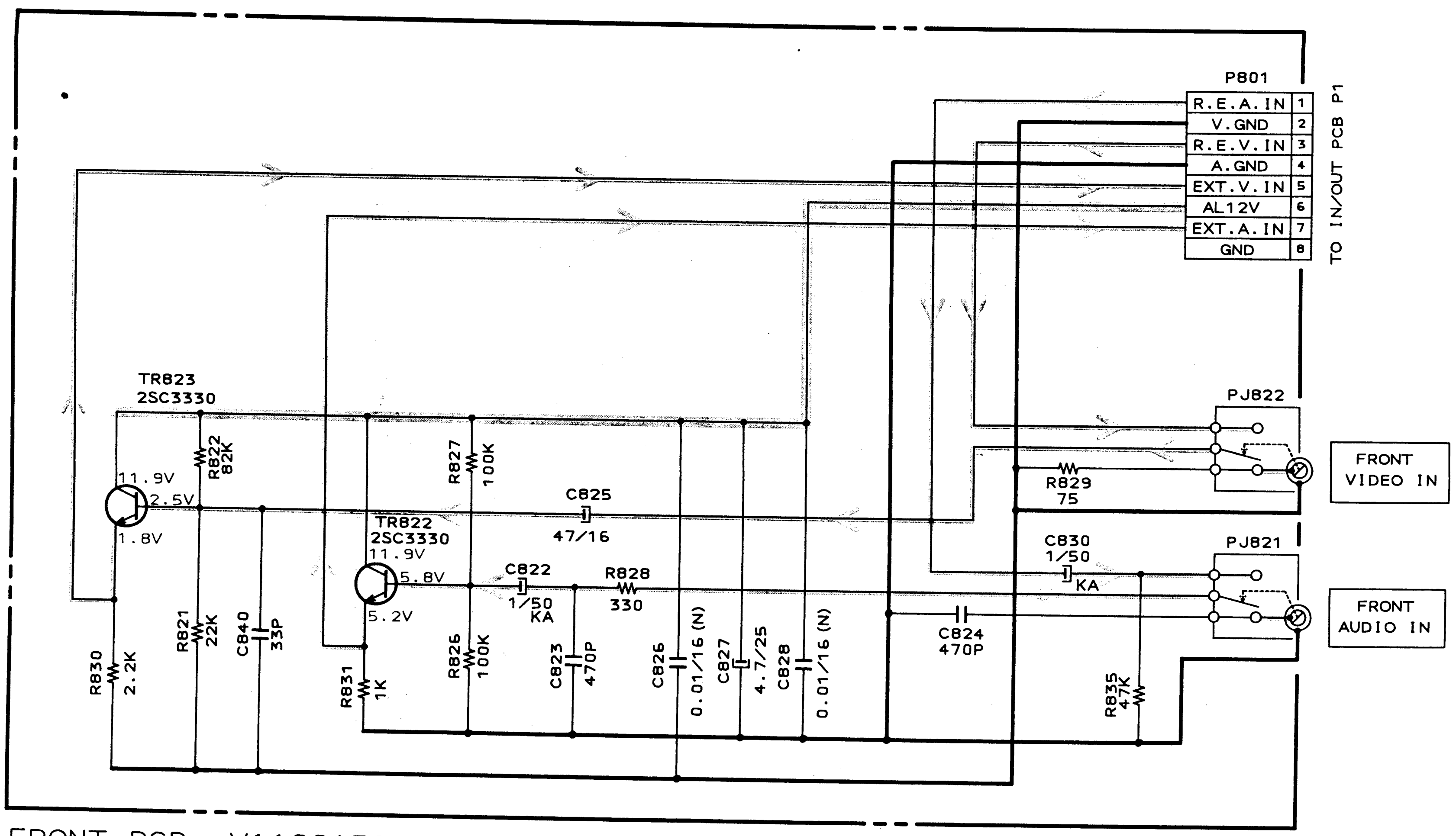
VS-X800EGN-N
VS-X1000EGN-N
IN/OUT
SCHEMATIC DIAGRAM

No.22-14 V120312M
A2


V1203A5060
426207J
(X1000)
(X800)
P1
P1A
P2
P4
JS1
PJ1
PJ2
PJ3
PJ4
PJ5
PJ6
IC1
P3
V.OUT
V.IN
A.L OUT
A.L IN
A.R OUT
A.R IN
OUT
TR1
TR2
TR3
TR4
TR7
L1
L2
C14
C23
R21
R22
R24
R25
R13
R27
R30
R32
R35
R16
C15
C18
C19
C20
C21

IN/OUT PCB V1203A5060

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT
PARTS INFORMATION.


P801
R.E.A.IN 1
V.GND 2
R.E.V.IN 3
A.GND 4
EXT.V.IN 5
AL12V 6
EXT.A.IN 7
GND 8
TO IN/OUT PCB P1
PJ822
FRONT VIDEO IN
PJ821
FRONT AUDIO IN
R829 75
C830 1/50 KA
C824 470P
R835 47K
TR823 2SC3330
11.9V
2.5V
1.8V
R822 82K
R821 22K
C840 33P
R830 2.2K
R827 100K
C825 47/16
TR822 2SC3330
11.9V
5.8V
5.2V
C822 1/50 KA
R828 330
R826 100K
R831 1K
C823 470P
C826 0.01/16 (N)
C827 4.7/25
C828 0.01/16 (N)

FRONT PCB V1188A5020

NOTE;
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN μF (P=PF) 50WV (K)
ALL ELECTROLYTIC CAPACITORS IN μF/WV (M)
ALL INDUCTORS IN μH (K)

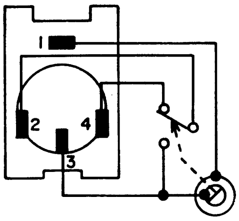
B (POWER SUPPLY) LINE
AUDIO IN SIGNAL LINE
VIDEO IN SIGNAL LINE

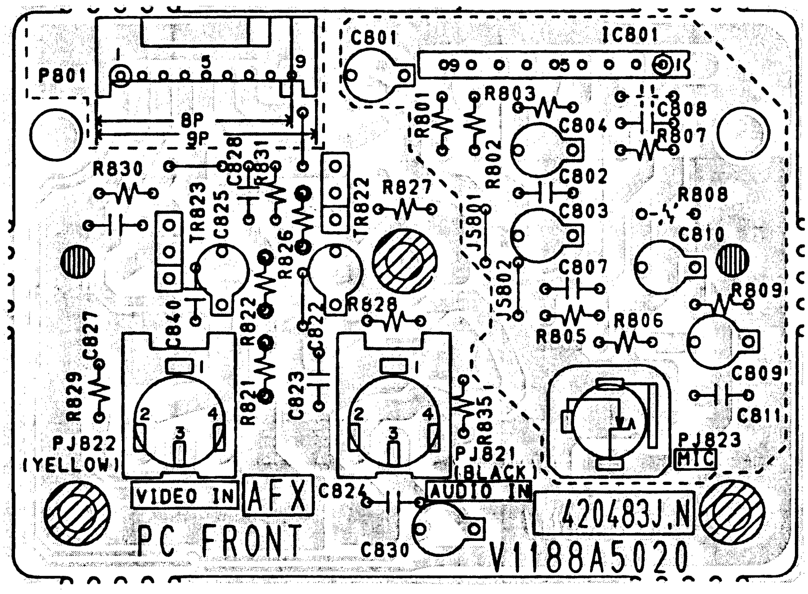
INDICATED VOLTAGES WERE MEASURED
DURING E-E (STOP) MODE

VS-X480EGN
FRONT
SCHEMATIC DIAGRAM

No.22-15 V120313M
A3

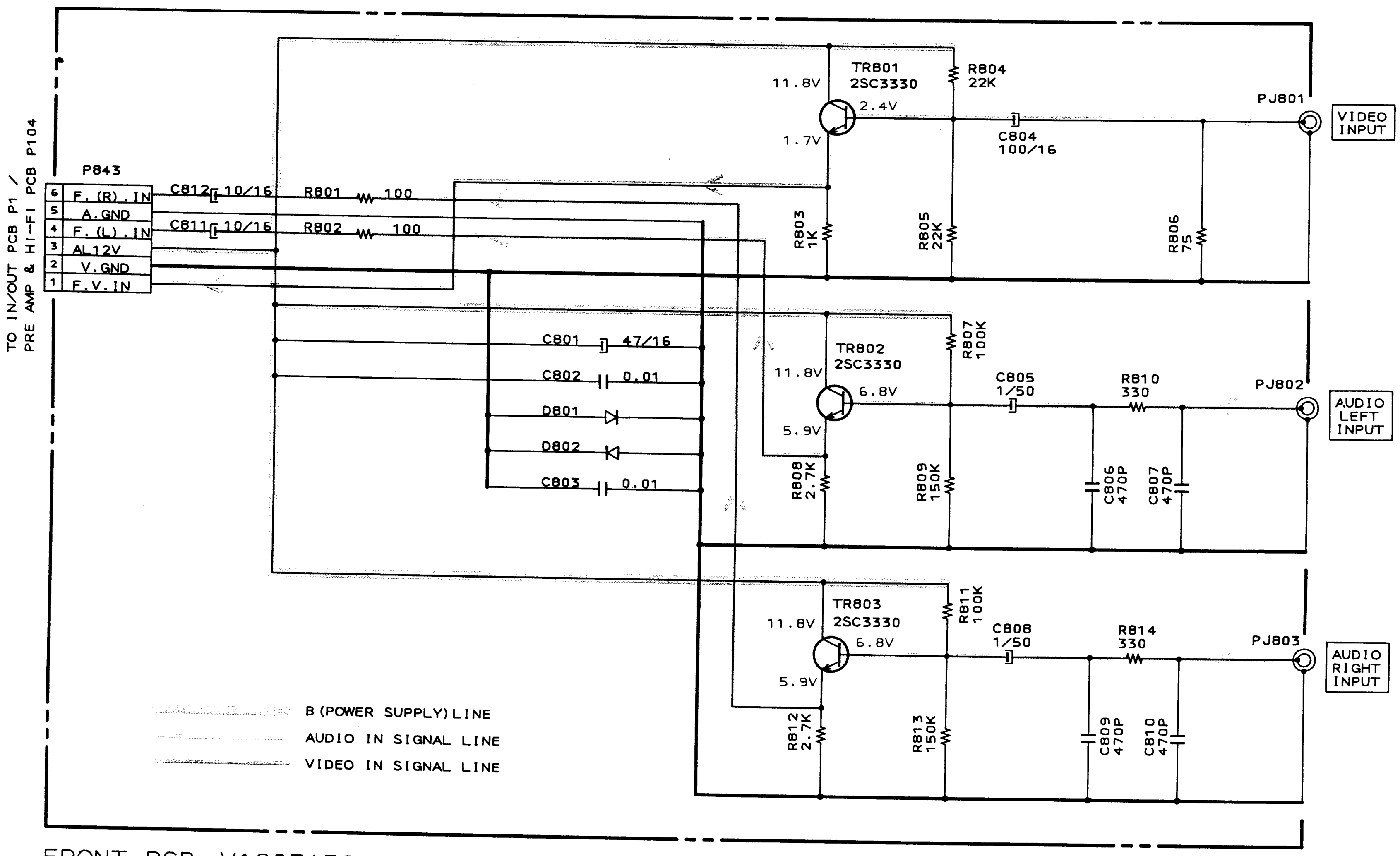
PJ821,822




P801
1
5
9
8P
9P
C801
IC801
R830
C828
R831
TR823
C825
R826
TR822
R827
R801
R803
R802
C804
C808
R807
C802
C803
R808
C810
J5801
J5802
C807
R809
R805
R806
C840
R822
C822
R828
C827
R829
R821
C823
R835
C809
C811
PJ822
(YELLOW)
PJ821
(BLACK)
PJ823
MIC
VIDEO IN
AFX
C824
AUDIO IN
PC FRONT
C830
420483J.N
V1188A5020

FRONT PCB V1188A5020

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.


VIDEO INPUT
PJ801
AUDIO LEFT INPUT
PJ802
AUDIO RIGHT INPUT
PJ803
TR801 2SC3330
TR802 2SC3330
TR803 2SC3330
11.8V
2.4V
1.7V
6.8V
5.9V
R804 22K
C804 100/16
R803 1K
R805 22K
R806 75
R807 100K
C805 1/50
R810 330
R808 2.7K
R809 150K
C806 470P
C807 470P
R811 100K
C808 1/50
R814 330
R812 2.7K
R813 150K
C809 470P
C810 470P
P843
6 F.(R).IN
5 A.GND
4 F.(L).IN
3 AL12V
2 V.GND
1 F.V.IN
TO IN/OUT PCB P1 / PRE AMP & HI-FI PCB P104
C812 10/16
R801 100
C811 10/16
R802 100
C801 47/16
C802 0.01
D801
D802
C803 0.01
B (POWER SUPPLY) LINE
AUDIO IN SIGNAL LINE
VIDEO IN SIGNAL LINE

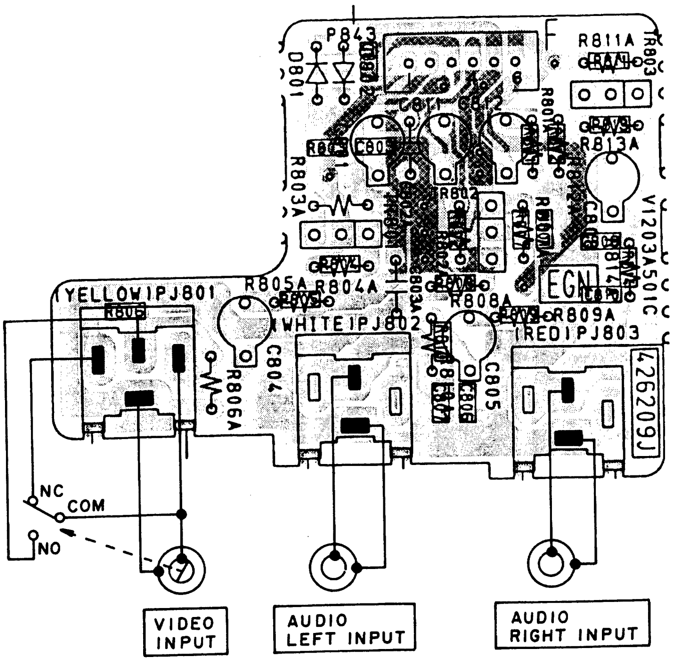
FRONT PCB V1203A501C

INDICATED VOLTAGES WERE MEASURED
DURING E-E (STOP) MODE.

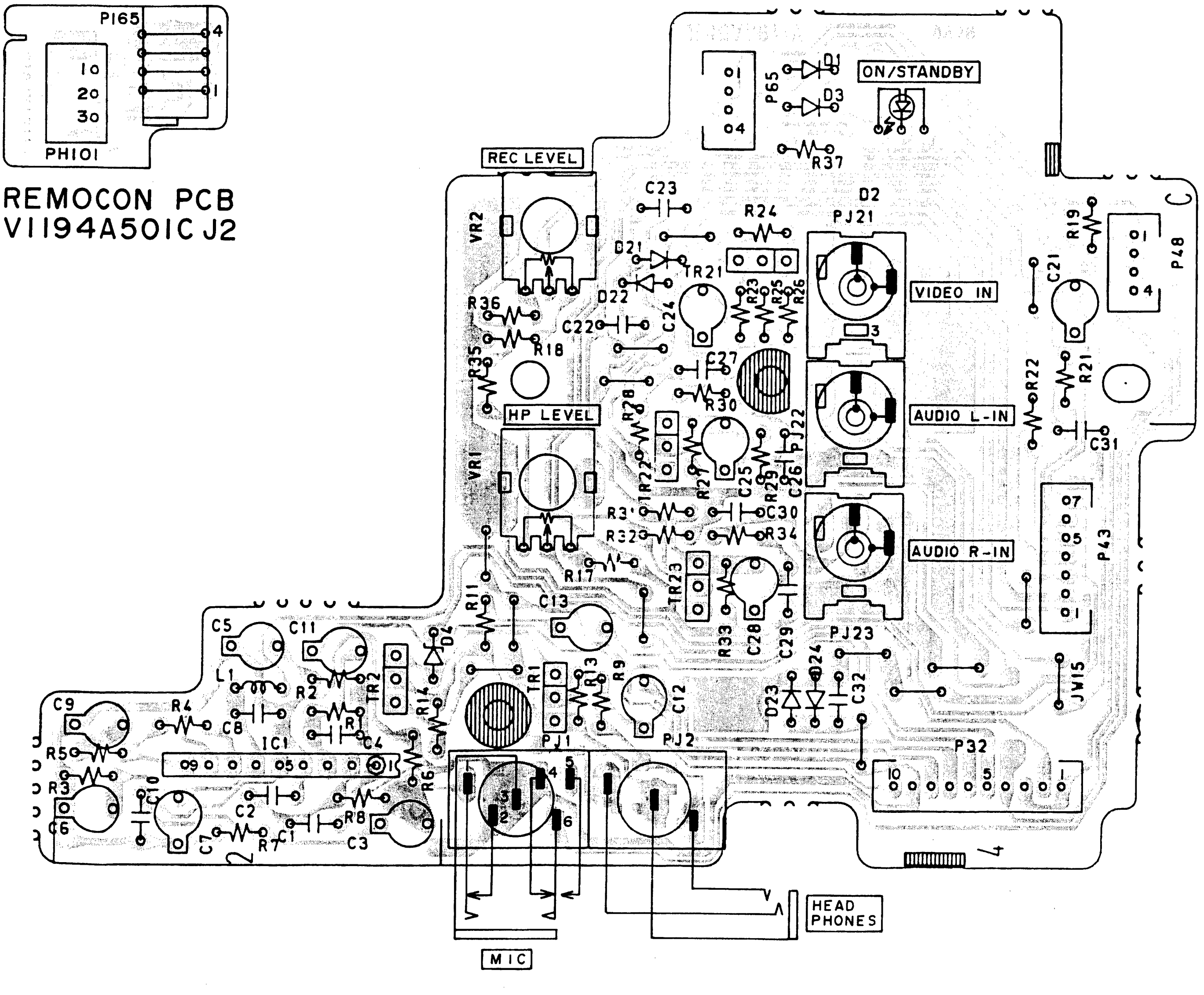
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF
ALL DIODES ARE 1SS131T-77

VS-X800EGN-N
FRONT
SCHEMATIC DIAGRAM

No.22-16 V120314M
A3


P843
D801
R811A
R803
R813A
C811
C812
R801A
R802
R803A
R805A
R804A
YELLOW PJ801
WHITE PJ802
RED PJ803
R806A
C804
C805
R808A
R809A
EGN
V1203A501C
426209J
NC
COM
NO
VIDEO INPUT
AUDIO LEFT INPUT
AUDIO RIGHT INPUT

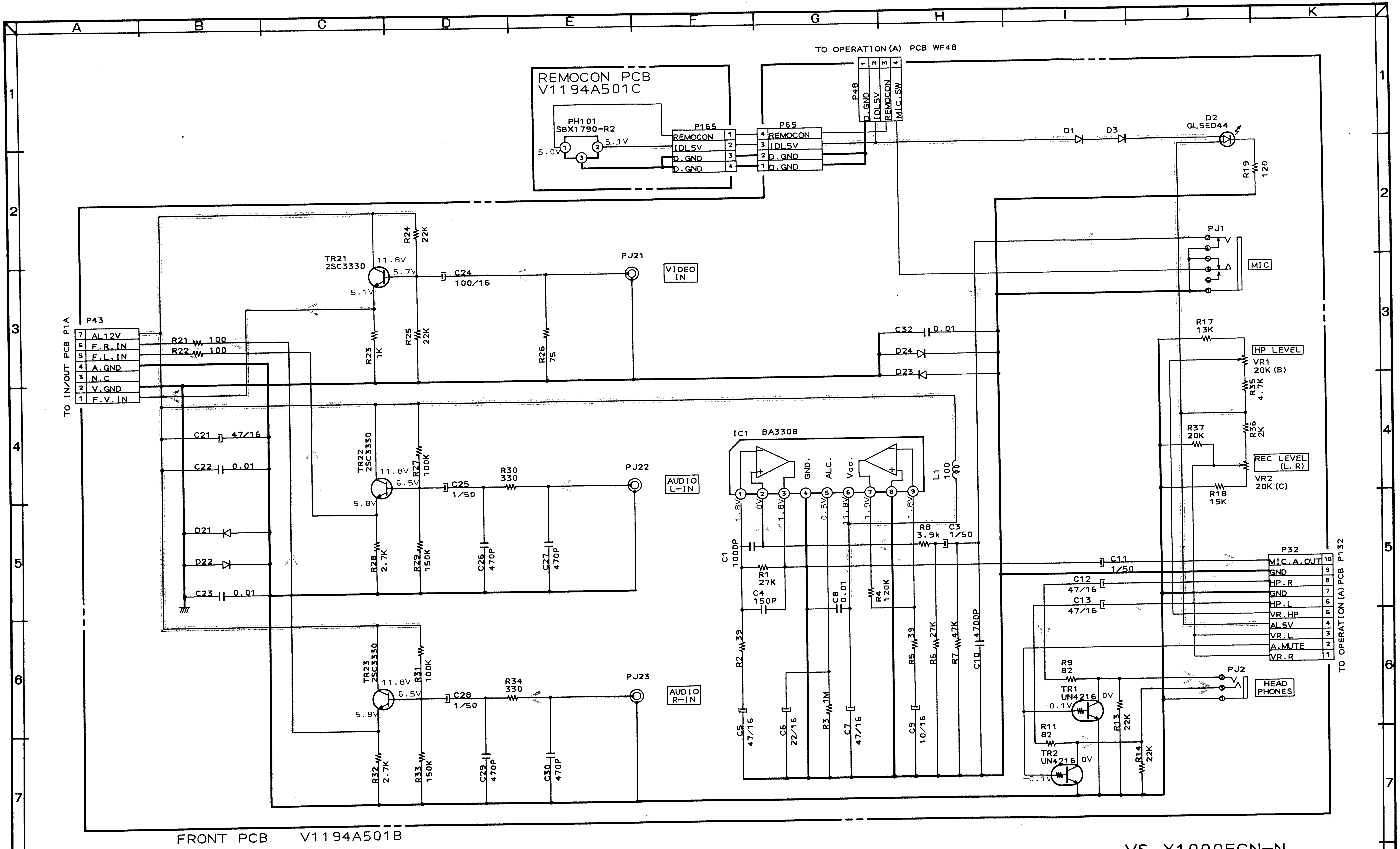
FRONT PCB V1203A501C


P165
4
1
1o
2o
3o
PH101

REMOCON PCB
V1194A501C J2

P65
D1
D3
ON/STANDBY
R37
REC LEVEL
VR2
C23
R24
D2
PJ21
D21
TR21
R23
R25
R26
VIDEO IN
R19
P48
C21
D22
R36
C22
C24
R18
R35
C27
R30
R28
HP LEVEL
AUDIO L-IN
R22
R21
C31
PJ22
VR1
TR22
R27
C25
R29
C26
R31
C30
R32
R34
AUDIO R-IN
P43
R17
TR23
R11
C13
R33
C28
C29
PJ23
C5
C11
D2
L1
R2
TR2
R14
TR1
R13
R9
C12
D23
D24
C32
JW15
C9
R4
C8
R1
C4
IC1
R5
R3
C10
R6
PJ1
PJ2
P32
C6
C7
C2
R7
C1
R8
C3
HEAD PHONES
MIC

FRONT PCB V1194A501B J2

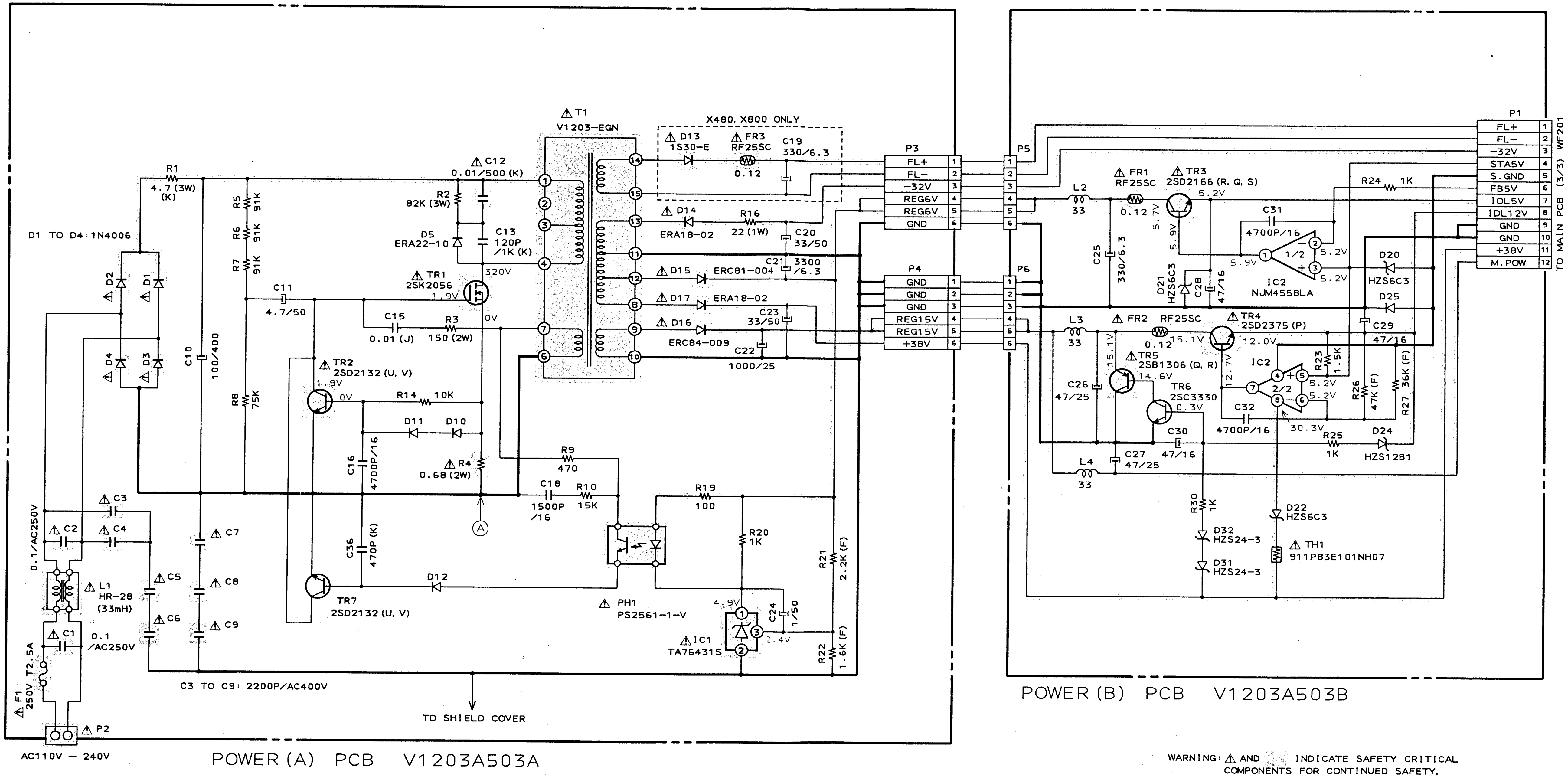

A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
REMOCON PCB
V1194A501C
PH101
SBX1790-R2
5.0V
5.1V
P165
REMOCON
IDL5V
D.GND
D.GND
P65
REMOCON
IDL5V
D.GND
D.GND
TO OPERATION (A) PCB WF48
P48
D.GND
IDL5V
REMOCON
MIC.SW
D1
D3
D2
GL5ED44
R19
120
PJ1
MIC
R17
13K
HP LEVEL
VR1
20K (B)
R35
4.7K
R36
2K
R37
20K
REC LEVEL
(L, R)
VR2
20K (C)
R18
15K
TO IN/OUT PCB P1A
P43
AL12V
F.R.IN
F.L.IN
A.GND
N.C
V.GND
F.V.IN
R21 100
R22 100
TR21
2SC3330
11.8V
5.7V
5.1V
R24
22K
C24
100/16
PJ21
VIDEO IN
R23
1K
R25
22K
R26
75
C32 0.01
D24
D23
C21 47/16
C22 0.01
D21
D22
C23 0.01
TR22
2SC3330
11.8V
6.5V
5.8V
R27
100K
C25
1/50
R30
330
PJ22
AUDIO L-IN
R28
2.7K
R29
150K
C26
470P
C27
470P
IC1 BA3308
GND.
ALC.
Vcc.
1.8V
0V
1.8V
0.5V
11.8V
1.9V
1.8V
L1
100
R8
3.9k
C3
1/50
C1
1000P
R1
27K
C4
150P
C8
0.01
R4
120K
R2
39
R5
39
R6
27K
R7
47K
C10
4700P
C5
47/16
C6
22/16
R3
1M
C7
47/16
C9
10/16
C11
1/50
C12
47/16
C13
47/16
P32
MIC.A.OUT
GND
HP.R
GND
HP.L
VR.HP
AL5V
VR.L
A.MUTE
VR.R
TO OPERATION (A) PCB P132
TR23
2SC3330
11.8V
6.5V
5.8V
R31
100K
C28
1/50
R34
330
PJ23
AUDIO R-IN
R32
2.7K
R33
150K
C29
470P
C30
470P
R9
82
TR1
UN4216
0V
-0.1V
R13
22K
R11
82
TR2
UN4216
0V
-0.1V
R14
22K
PJ2
HEAD PHONES
FRONT PCB V1194A501B

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF
ALL DIODE IS 1SS131T-77

B (POWER SUPPLY) LINE
AUDIO OUT SIGNAL LINE
AUDIO IN SIGNAL LINE
VIDEO IN SIGNAL LINE

INDICATED VOLTAGES WERE
MEASURED DURING E-E MODE.

VS-X1000EGN-N
FRONT
SCHEMATIC DIAGRAM
No.22-17 V120315M
A2


⚠T1
V1203-EGN
X480, X800 ONLY
⚠D13 1S30-E
⚠FR3 RF25SC 0.12
C19 330/6.3
R1 4.7 (3W) (K)
⚠C12 0.01/500 (K)
R2 82K (3W)
R5 91K
R6 91K
R7 91K
R8 75K
D5 ERA22-10
C13 120P /1K (K)
D1 TO D4:1N4006
D1
D2
D3
D4
C10 100/400
C11 4.7/50
⚠TR1 2SK2056
1.9V
320V
0V
C15 0.01 (J)
R3 150 (2W)
⚠TR2 2SD2132 (U, V)
R14 10K
D11
D10
C16 4700P/16
⚠R4 0.68 (2W)
R9 470
C18 1500P /16
R10 15K
C36 470P (K)
D12
TR7 2SD2132 (U, V)
Ⓐ
⚠PH1 PS2561-1-V
R19 100
R20 1K
R21 2.2K (F)
R22 1.6K (F)
C24 1/50
4.9V
2.4V
⚠IC1 TA76431S
⚠D14 ERA18-02
R16 22 (1W)
C20 33/50
⚠D15 ERC81-004
C21 3300 /6.3
⚠D17 ERA18-02
C23 33/50
⚠D16 ERC84-009
C22 1000/25
⚠C3
⚠C2
⚠C4
⚠C5
⚠C6
⚠C7
⚠C8
⚠C9
0.1/AC250V
⚠L1 HR-28 (33mH)
⚠C1 0.1 /AC250V
⚠F1 250V T2.5A
⚠P2
AC110V ~ 240V
C3 TO C9: 2200P/AC400V
TO SHIELD COVER
POWER (A) PCB V1203A503A
P3
FL+
FL-
-32V
REG6V
REG6V
GND
P4
GND
GND
GND
REG15V
REG15V
+38V
P5
P6
L2 33
⚠FR1 RF25SC 0.12
⚠TR3 2SD2166 (R, Q, S)
5.2V
5.7V
5.9V
C25 330/6.3
D21 HZS6C3
C28 47/16
C31 4700P/16
IC2 NJM4558LA
1/2
5.2V
R24 1K
D20 HZS6C3
D25
C29 47/16
L3 33
⚠FR2 RF25SC 0.12
15.1V
⚠TR4 2SD2375 (P)
12.0V
⚠TR5 2SB1306 (Q, R)
14.6V
TR6 2SC3330
0.3V
12.7V
IC2 2/2
R23 1.5K
R26 47K (F)
R27 36K (F)
C26 47/25
C32 4700P/16
30.3V
C30 47/16
R25 1K
D24 HZS12B1
L4 33
C27 47/25
R30 1K
D32 HZS24-3
D31 HZS24-3
D22 HZS6C3
⚠TH1 911P83E101NH07
P1
FL+
FL-
-32V
STA5V
S.GND
FB5V
IDL5V
IDL12V
GND
GND
+38V
M.POW
TO MAIN PCB (3/3) WF201
POWER (B) PCB V1203A503B

▬ :B (POWER SUPPLY) LINE

*INDICATED VOLTAGES WERE MEASURED DURING E-E MODE.
THE DC VOLTMETER'S NEGATIVE INPUT WAS CONNECTED
TO THE Ⓐ POINT WHEN THE PRIMARY SECTION WAS MEASURED.
*THE PRIMARY INPUT VOLTAGE WAS AC 220V.

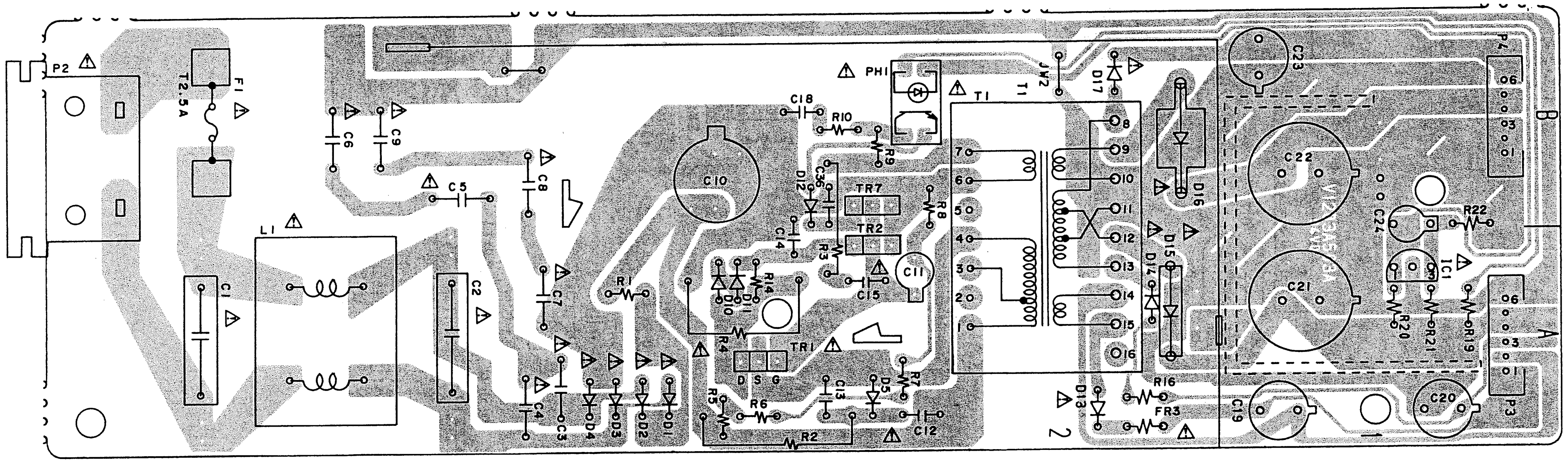
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN μF /50WV (M)
ALL INDUCTORS IN μH (K)
ALL DIODES ARE 1SS131T-77

WARNING: ⚠ AND ▨ INDICATE SAFETY CRITICAL
COMPONENTS FOR CONTINUED SAFETY.
REPLACE SAFETY CRITICAL COMPONENTS
ONLY WITH MANUFACTURER'S RECOMMENDED
PARTS

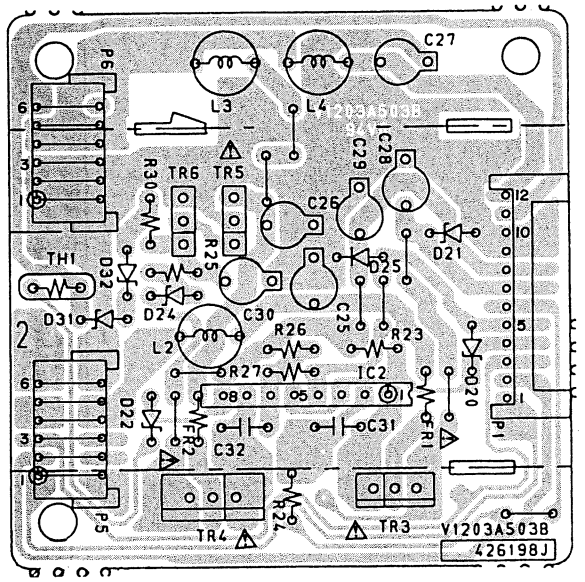
AVERTISSMENT: ⚠ ET ▨ , ILS INDIQUENT LES
COMPOSTANTS CRITIQUES DE SÉCURITÉ,
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ
DE L'APPAREIL, NE REMPLACER QUE DES
PIÈCES RECOMMANDEES PAR LE FABRICANT

VS-X480EGN
VS-X800EGN-N
VS-X1000EGN-N
POWER SUPPLY
SCHEMATIC DIAGRAM

No.22-18 V120319M
A2


P2
F1
T2.5A
L1
C1
C2
C5
C6
C7
C8
C9
C10
C11
C18
R10
R9
PH1
T1
JW2
TR7
TR2
TR1
D S G
D17
D16
D15
D14
D13
C22
C21
C23
C24
C19
C20
IC1
R22
R16
FR3
P4
P3
A
B

POWER(A) PCB V1203A503A

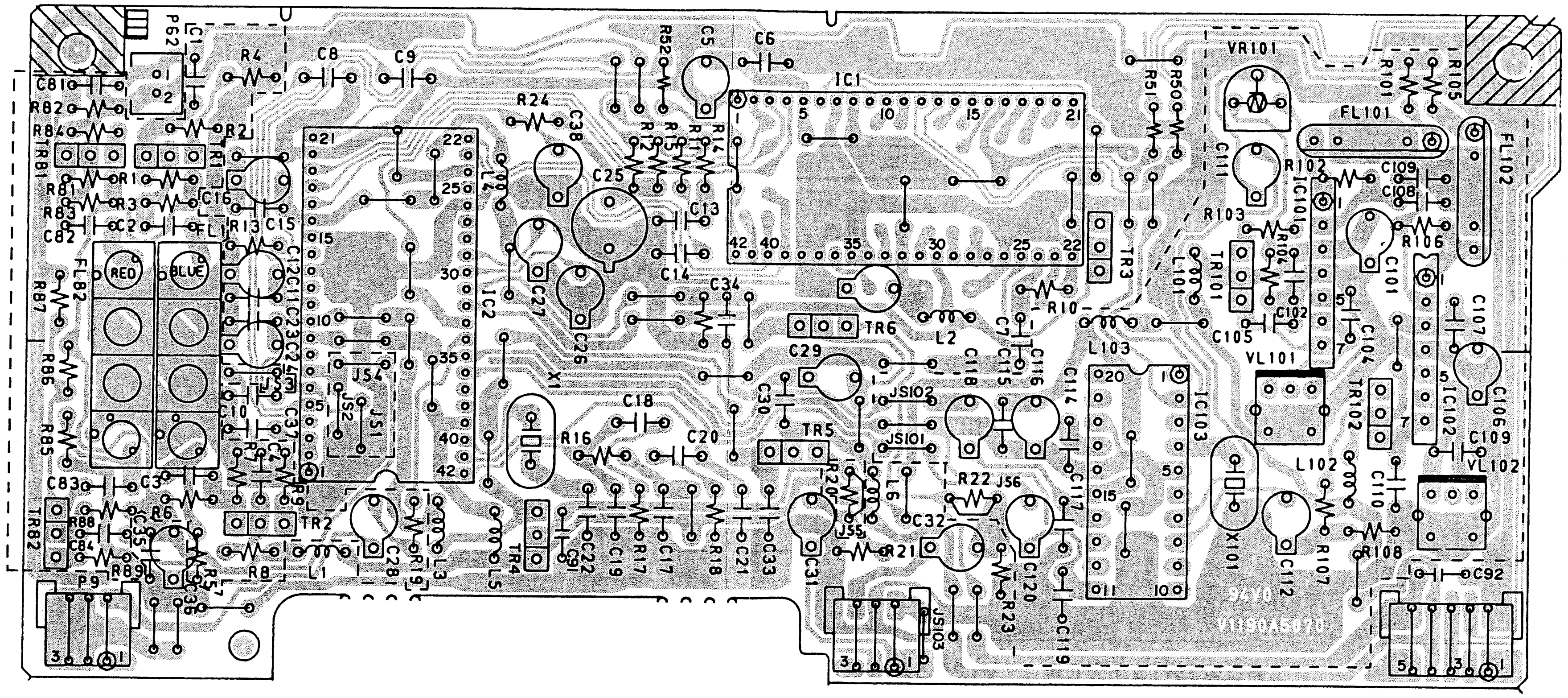

P6
L3
L4
C27
TR6
TR5
R30
R25
TH1
D32
D31
D24
C26
C28
C29
D25
D21
C30
L2
R26
R23
R27
IC2
C25
D22
C32
C31
FR1
FR2
D20
P1
P5
TR4
TR3
R24
V1203A503B
426198J

POWER(B)PCB V1203A503B

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT
PARTS INFORMATION.

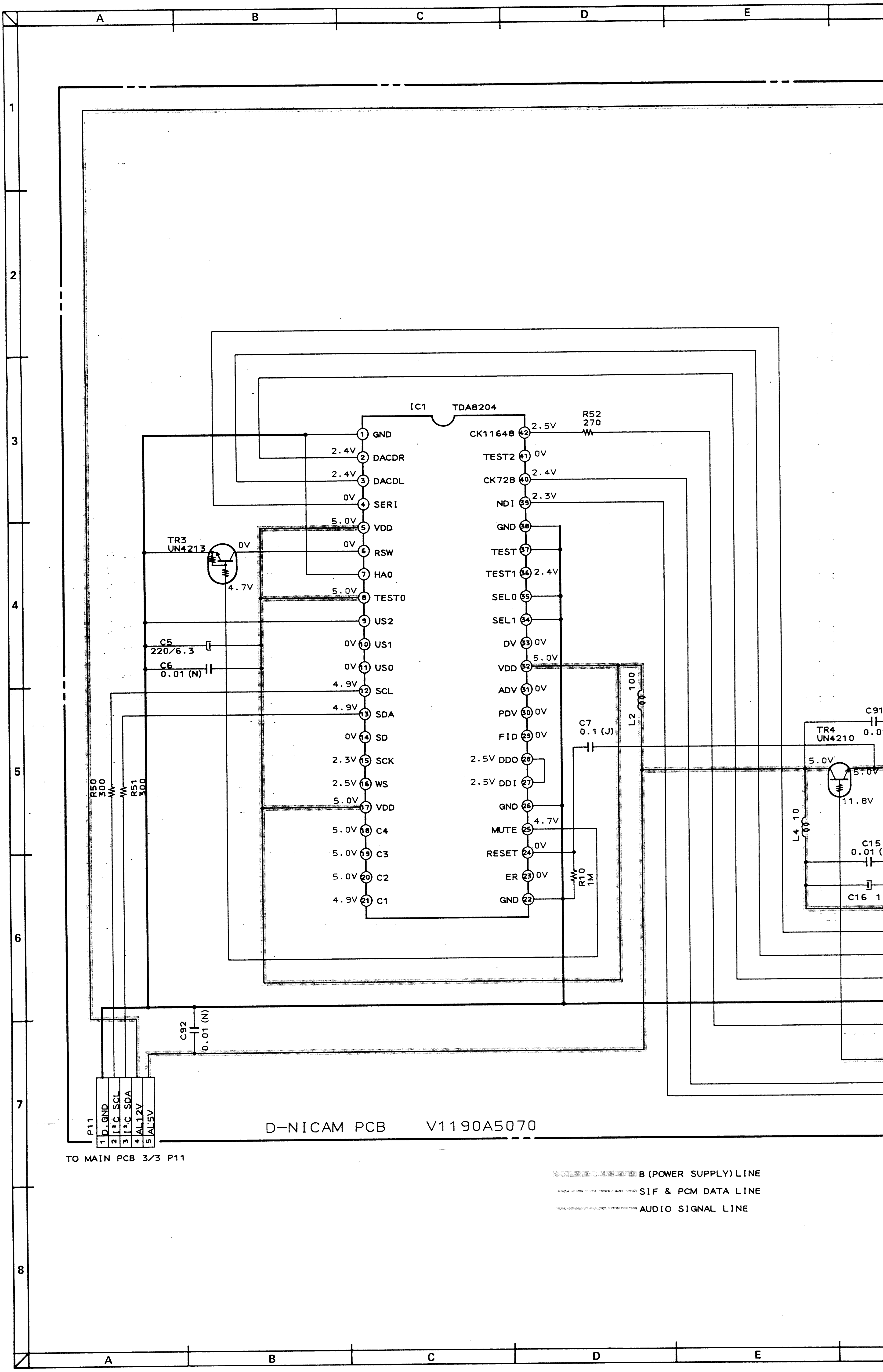
WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY.
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

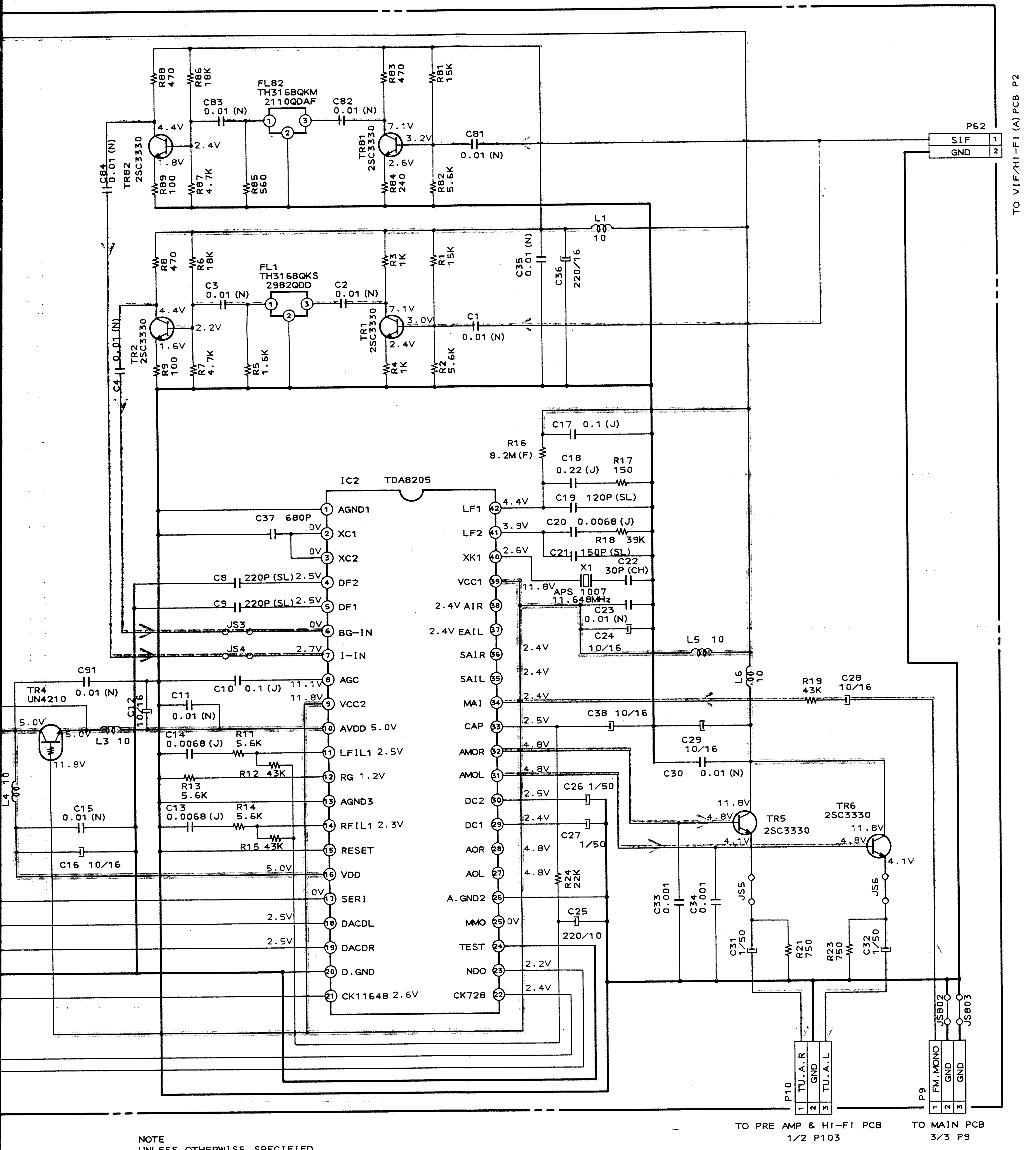
AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT


IC1
IC2
IC101
IC102
IC103
VR101
FL101
FL102
RED
BLUE
P62
P9
X1
X101
TR1
TR2
TR3
TR4
TR5
TR6
TR101
TR102
TR81
TR82
VL101
VL102
L1
L2
L101
L102
L103
JS101
JS102
JS103
94V0
V1190A5070

D-NICAM PCB V1190A5070J1

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT
PARTS INFORMATION.


A
B
C
D
E
1
2
3
4
5
6
7
8
IC1
TDA8204
1 GND
2 DACDR
3 DACDL
4 SERI
5 VDD
6 RSW
7 HAO
8 TESTO
9 US2
10 US1
11 USO
12 SCL
13 SDA
14 SD
15 SCK
16 WS
17 VDD
18 C4
19 C3
20 C2
21 C1
42 CK11648
41 TEST2
40 CK728
39 NDI
38 GND
37 TEST
36 TEST1
35 SEL0
34 SEL1
33 DV
32 VDD
31 ADV
30 PDV
29 FID
28 DDO
27 DDI
26 GND
25 MUTE
24 RESET
23 ER
22 GND
2.4V
2.4V
0V
5.0V
0V
5.0V
0V
0V
4.9V
4.9V
0V
2.3V
2.5V
5.0V
5.0V
5.0V
5.0V
4.9V
2.5V
0V
2.4V
2.3V
2.4V
0V
5.0V
0V
0V
0V
2.5V
2.5V
4.7V
0V
0V
R52
270
TR3
UN4213
0V
4.7V
C5
220/6.3
C6
0.01 (N)
R50
300
R51
300
C7
0.1 (J)
L2
100
R10
1M
C92
0.01 (N)
TR4
UN4210
5.0V
5.0V
11.8V
L4 10
C91
0.0
C15
0.01
C16 1
P11
1 D.GND
2 I²C SCL
3 I²C SDA
4 AL12V
5 AL5V
TO MAIN PCB 3/3 P11
D-NICAM PCB V1190A5070
B (POWER SUPPLY) LINE
SIF & PCM DATA LINE
AUDIO SIGNAL LINE

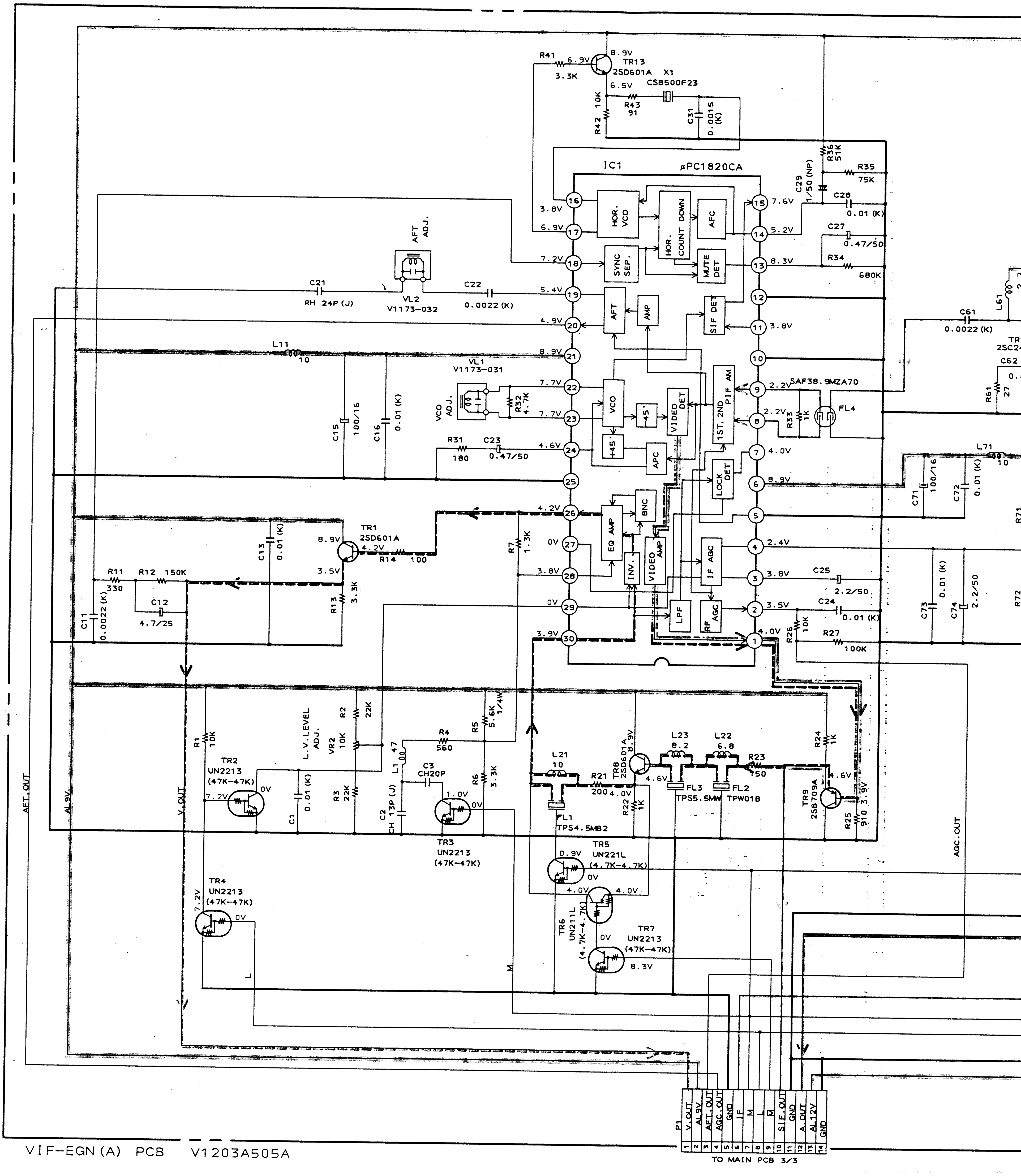


R88 470
R86 18K
FL82 TH316BQKM 2110QDAF
C83 0.01 (N)
C82 0.01 (N)
R83 470
R81 15K
C81 0.01 (N)
TR82 2SC3330
TR81 2SC3330
C84 0.01 (N)
R89 100
R87 4.7K
R85 560
R84 240
R82 5.6K
4.4V
2.4V
1.8V
7.1V
3.2V
2.6V
L1 10
R8 470
R6 18K
FL1 TH316BQKS 2982QDD
C3 0.01 (N)
C2 0.01 (N)
R3 1K
R1 15K
C35 0.01 (N)
C36 220/16
TR2 2SC3330
TR1 2SC3330
C4 0.01 (N)
C1 0.01 (N)
R9 100
R7 4.7K
R5 1.6K
R4 1K
R2 5.6K
4.4V
2.2V
1.6V
7.1V
3.0V
2.4V
P62
SIF 1
GND 2
TO VIF/HI-FI (A) PCB P2
C17 0.1 (J)
R16 8.2M (F)
C18 0.22 (J)
R17 150
C19 120P (SL)
C20 0.0068 (J)
R18 39K
C21 150P (SL)
C22 30P (CH)
X1 APS 1007 11.648MHz
C23 0.01 (N)
C24 10/16
L5 10
L6 10
IC2 TDA8205
1 AGND1
2 XC1
3 XC2
4 DF2
5 DF1
6 BG-IN
7 I-IN
8 AGC
9 VCC2
10 AVDD 5.0V
11 LFIL1 2.5V
12 RG 1.2V
13 AGND3
14 RFIL1 2.3V
15 RESET
16 VDD
17 SERI
18 DACDL
19 DACDR
20 D.GND
21 CK11648 2.6V
42 LF1 4.4V
41 LF2 3.9V
40 XK1 2.6V
39 VCC1 11.8V
38 2.4V AIR
37 2.4V EAIL
36 SAIR 2.4V
35 SAIL 2.4V
34 MAI 2.4V
33 CAP 2.5V
32 AMOR 4.8V
31 AMOL 4.8V
30 DC2 2.5V
29 DC1 2.4V
28 AOR 4.8V
27 AOL 4.8V
26 A.GND2
25 MMO 0V
24 TEST
23 NDO 2.2V
22 CK728 2.4V
C37 680P
0V
0V
C8 220P (SL) 2.5V
C9 220P (SL) 2.5V
JS3 0V
JS4 2.7V
C91 0.01 (N)
TR4 UN4210
C10 0.1 (J) 11.1V
C11 0.01 (N) 11.8V
C12 10/16
5.0V
5.0V
L3 10
11.8V
C14 0.0068 (J)
R11 5.6K
R12 43K
R13 5.6K
C13 0.0068 (J)
R14 5.6K
R15 43K
L4 10
C15 0.01 (N)
C16 10/16
5.0V
0V
2.5V
2.5V
R19 43K
C28 10/16
C38 10/16
C29 10/16
C30 0.01 (N)
C26 1/50
C27 1/50
R24 22K
C25 220/10
TR5 2SC3330
TR6 2SC3330
11.8V
4.8V
4.1V
11.8V
4.8V
4.1V
C33 0.001
C34 0.001
JS5
JS6
C31 1/50
R21 750
R23 750
C32 1/50
JS802
JS803
P10
1 TU.A.R
2 GND
3 TU.A.L
P9
1 FM.MONO
2 GND
3 GND
TO PRE AMP & HI-FI PCB 1/2 P103
TO MAIN PCB 3/3 P9

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN µF 50WV (M)
ALL ELECTROLYTIC CAPACITORS IN µF/WV
ALL INDUCTORS IN µH (K)

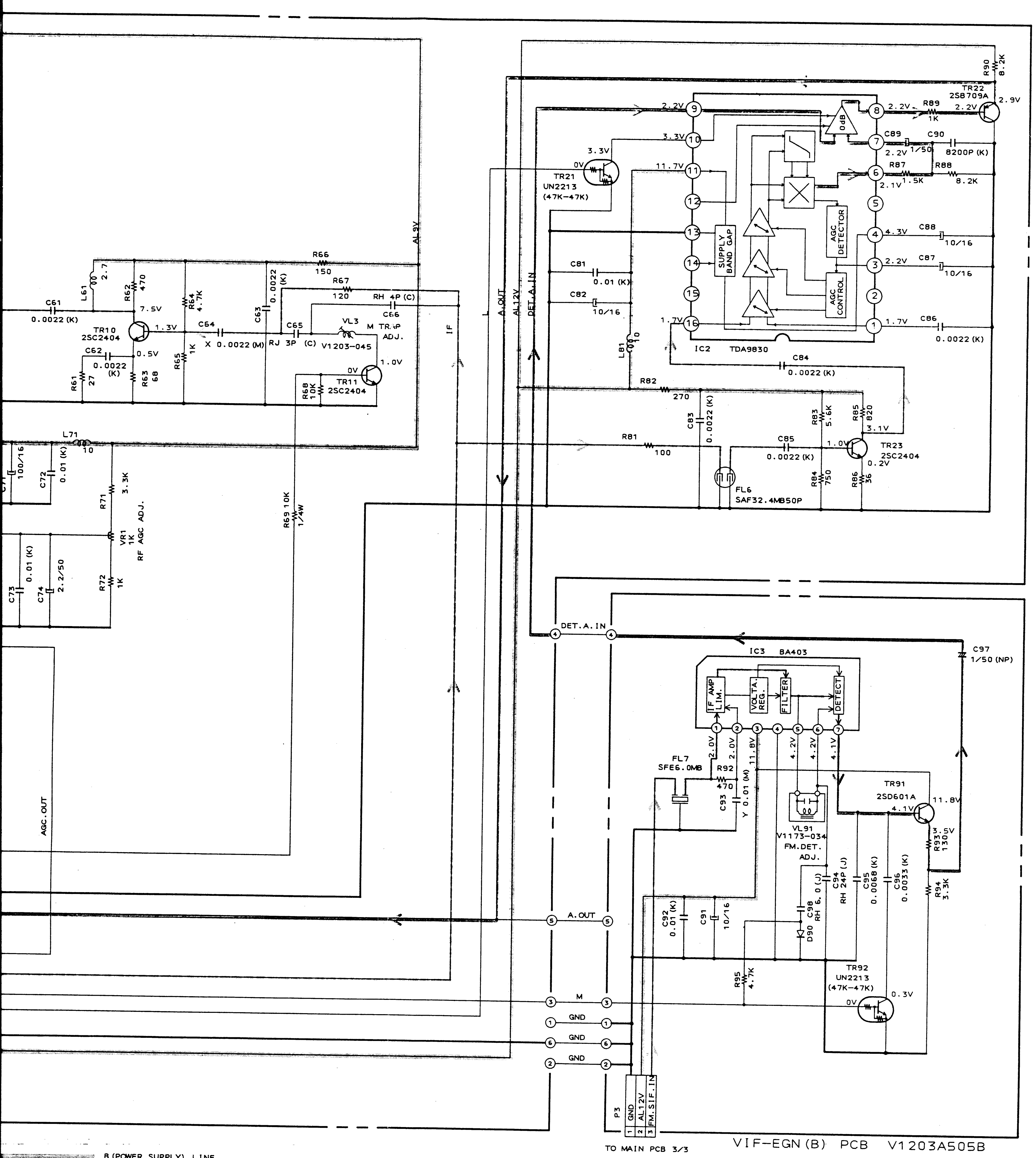
INDICATED VOLTAGES WERE MEASURED
DURING E-E MODE.
(NO SIGNAL WAS BEING INPUT.)

VS-X800EGN-N
VS-X1000EGN-N
D-NICAM
SCHEMATIC DIAGRAM
No.22-19 V120316M
A2


IC1 μPC1820CA
HOR. VCO
HOR. COUNT DOWN
AFC
SYNC SEP.
MUTE DET
AFT
AMP
SIF DET
VCO
45°
VIDEO DET
1ST, 2ND PIF AM
+45°
APC
LOCK DET
EQ AMP
BNC
INV.
VIDEO AMP
IF AGC
LPF
RF AGC
R41 3.3K
TR13 2SD601A
8.9V
6.9V
6.5V
X1 CSB500F23
R42 10K
R43 91
C31 0.0015 (K)
R36 51K
R35 75K
C29 1/50 (NP)
C28 0.01 (K)
C27 0.47/50
R34 680K
AFT ADJ.
VL2 V1173-032
C21 RH 24P (J)
C22 0.0022 (K)
L11 10
VL1 V1173-031
VCO ADJ.
R32 4.7K
C15 100/16
C16 0.01 (K)
R31 180
C23 0.47/50
SAF38.9MZA70
FL4
R33 1K
C61 0.0022 (K)
L61
R61 27
C62
TR
2SC2
L71 10
C71 100/16
C72 0.01 (K)
C73 0.01 (K)
C74 2.2/50
R71
R72
TR1 2SD601A
C13 0.01 (K)
R14 100
R13 3.3K
R11 330
R12 150K
C12 4.7/25
C11 0.0022 (K)
R7 1.3K
C25 2.2/50
C24 0.01 (K)
R26 10K
R27 100K
R1 10K
TR2 UN2213 (47K-47K)
L.V.LEVEL ADJ.
VR2 10K
R2 22K
R3 22K
C1 0.01 (K)
R4 560
L1 47
C3 CH20P
C2 CH 13P (J)
R5 5.6K 1/4W
R6 3.3K
TR3 UN2213 (47K-47K)
L21 10
R21 200
TR8 2SD601A
R22 1K
L23 8.2
L22 6.8
R23 750
FL1 TPS4.5MB2
FL3 TPS5.5MW
FL2 TPW01B
R24 1K
TR9 2SB709A
R25 910
TR5 UN221L (4.7K-4.7K)
TR4 UN2213 (47K-47K)
TR6 UN211L (4.7K-4.7K)
TR7 UN2213 (47K-47K)
AFT.OUT
AL9V
V.OUT
AGC.OUT
L
M
P1
V.OUT
AL9V
AFT.OUT
AGC.OUT
GND
IF
M
L
M
SIF.OUT
GND
A.OUT
AL12V
GND
1 2 3 4 5 6 7 8 9 10 11 12 13 14
TO MAIN PCB 3/3

VIF-EGN (A) PCB V1203A505A

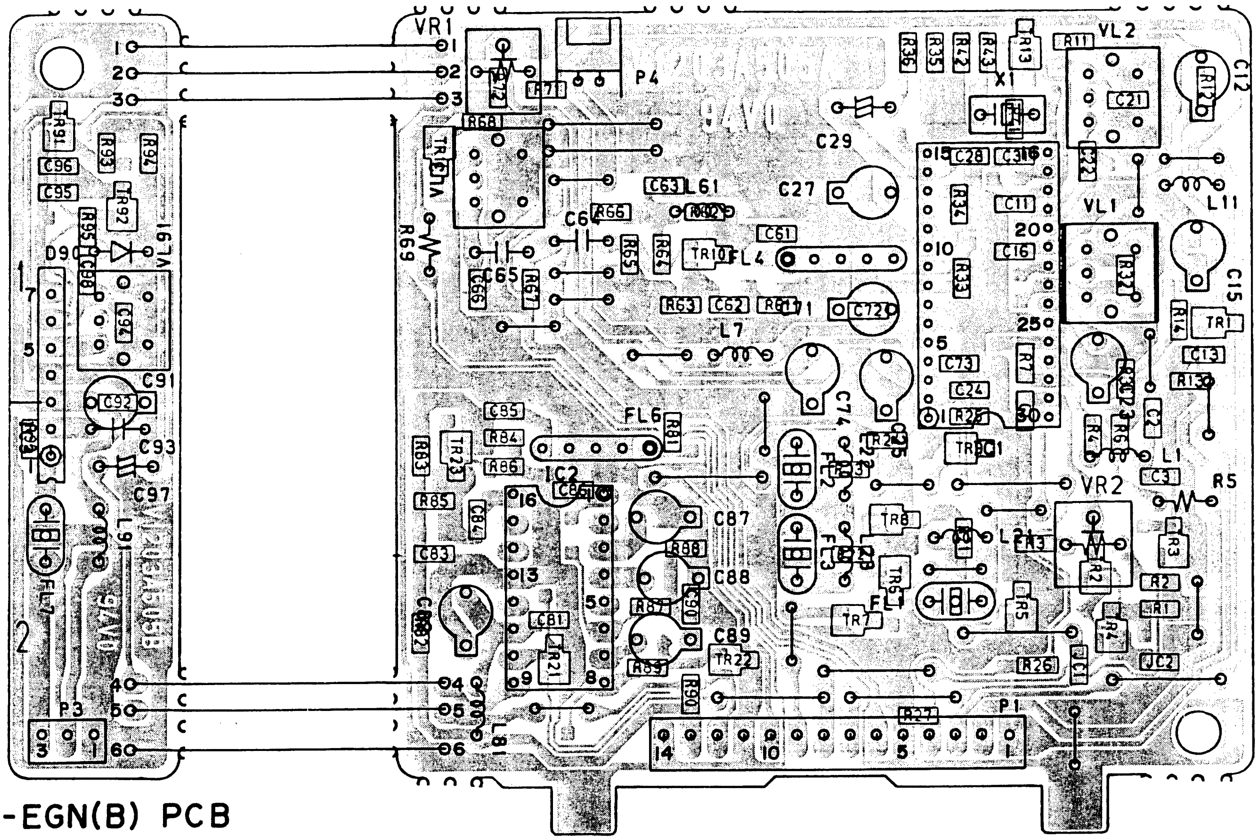
NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV
ALL INDUCTORS IN μH (K)


AL9V
R66 150
R67 120
RH 4P (C) C66
VL3 M TRAP ADJ. V1203-045
C61 0.0022 (K)
L61 2.7
R62 470
R64 4.7K
C63 0.0022 (K)
7.5V
TR10 2SC2404
1.3V
C64 X 0.0022 (M)
C65 RJ 3P (C)
C62 0.0022 (K)
0.5V
R61 27
R63 68
R65 1K
R68 10K
TR11 2SC2404
0V
1.0V
IF
A.OUT
AL12V
DET.A.IN
L71 10
C71 100/16
C72 0.01 (K)
R71 3.3K
VR1 1K RF AGC ADJ.
C73 0.01 (K)
C74 2.2/50
R72 1K
R69 10K 1/4W
AGC.OUT
TR21 UN2213 (47K-47K)
3.3V
0V
2.2V
3.3V
11.7V
1.7V
0dB
SUPPLY BAND GAP
AGC DETECTOR
AGC CONTROL
IC2 TDA9830
C81 0.01 (K)
C82 10/16
L81 10
R90 8.2K
TR22 2SB709A
2.9V
R89 1K
2.2V
C89 1/50
C90 8200P (K)
R87 1.5K
R88 8.2K
2.1V
C88 10/16
4.3V
C87 10/16
C86 0.0022 (K)
C84 0.0022 (K)
R82 270
C83 0.0022 (K)
R83 5.6K
R85 820
3.1V
R81 100
C85 0.0022 (K)
1.0V
TR23 2SC2404
0.2V
R84 750
R86 36
FL6 SAF32.4MB50P
DET.A.IN
IC3 BA403
IF AMP LIM.
VOLTA. REG.
FILTER
DETECT
C97 1/50 (NP)
2.0V
2.0V
11.8V
4.2V
4.2V
4.1V
FL7 SFE6.0MB
R92 470
C93 Y 0.01 (M)
VL91 V1173-034 FM.DET. ADJ.
TR91 2SD601A
11.8V
4.1V
3.5V
R93 130
C94 RH 24P (J)
C95 0.0068 (K)
C96 0.0033 (K)
R94 3.3K
C92 0.01 (K)
C91 10/16
C98 RH 6.0 (J)
D90
R95 4.7K
TR92 UN2213 (47K-47K)
0V
0.3V
A.OUT
M
GND
GND
GND
P3
GND
AL12V
FM.SIF.IN
TO MAIN PCB 3/3
VIF-EGN (B) PCB V1203A505B

B (POWER SUPPLY) LINE
IF SIGNAL LINE
SIF SIGNAL LINE
AUDIO SIGNAL LINE
VIDEO SIGNAL LINE

INDICATED VOLTAGES WERE MEASURED
DURING E-E (STOP) MODE.
(WHEN A STATION WAS BEING RECEIVED)

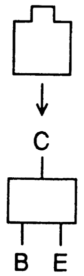
VS-X480EGN
VIF-EGN (A), (B)
SCHEMATIC DIAGRAM
No.22-20 V120320M
A1

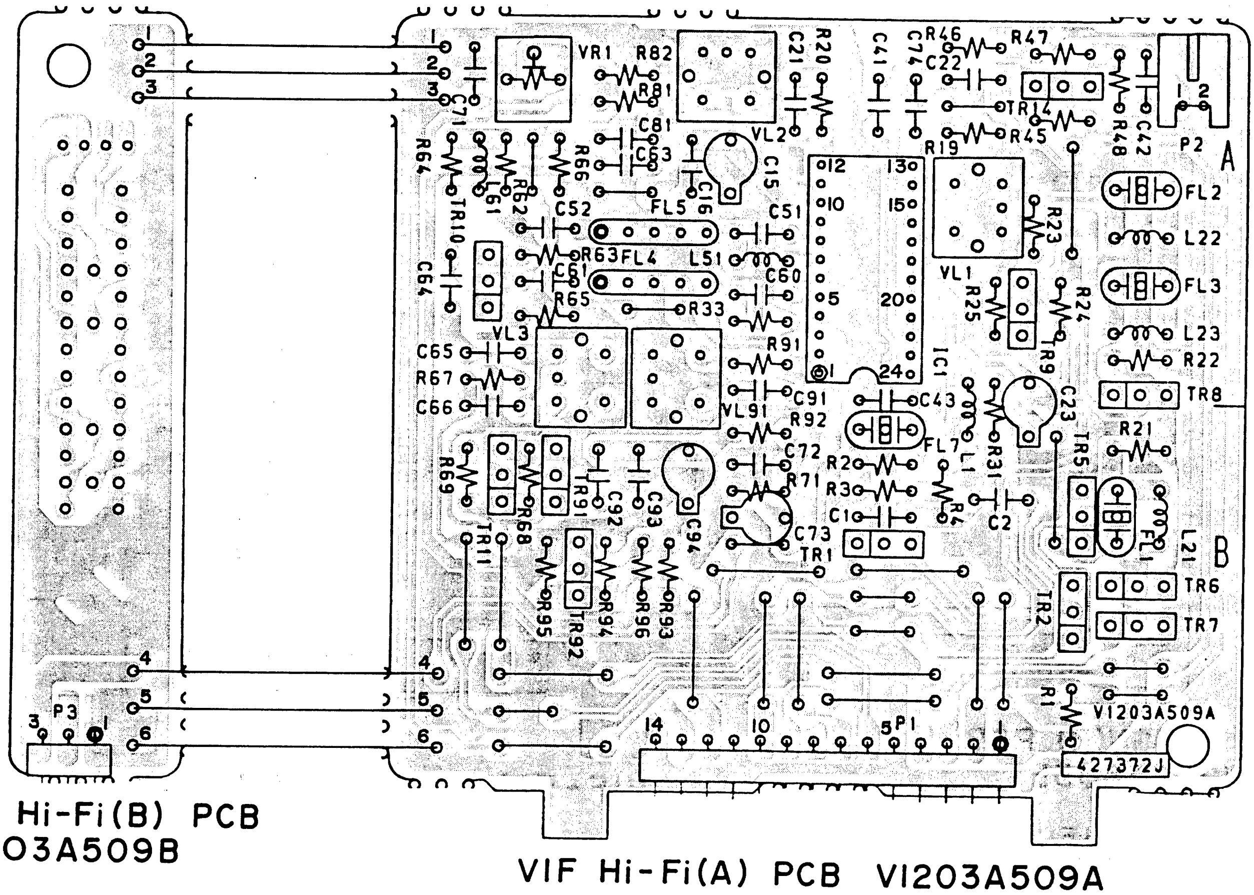

VR1
P4
94V0
C29
X1
VL2
C12
C21
C22
C28
C31
R36
R35
R42
R43
R13
R11
R12
R68
TR11
R69
R71
R72
C63
L61
C27
C64
R66
R62
C61
TR10
FL4
C65
C66
R67
R65
R64
R63
C62
R61
L71
C72
L7
C74
C75
C73
C24
R25
TR9
C1
R33
R34
C11
C16
R7
VL1
R32
L11
C15
TR1
R14
C13
R13
C2
R4
R6
L1
C3
R5
VR2
R3
R2
R1
R4
IC2
TR8
L21
TR3
TR5
FL1
FL2
FL3
R22
R23
TR7
R26
IC1
IC2
C85
R84
R83
TR23
R86
FL6
R81
C86
R85
C84
C83
C87
R88
C88
C82
C81
R21
R87
C90
C89
TR22
R89
R90
R27
P1
R91
R93
R94
C96
C95
TR92
R95
D90
C98
VL91
C94
C91
C92
C93
C97
L91
R94
FL7
P3
1
2
3
4
5
6
7
8
9
10
13
14
15
16
20
25
30

VIF-EGN(B) PCB
V1203A505B

VIF-EGN(A) PCB V1203A505A

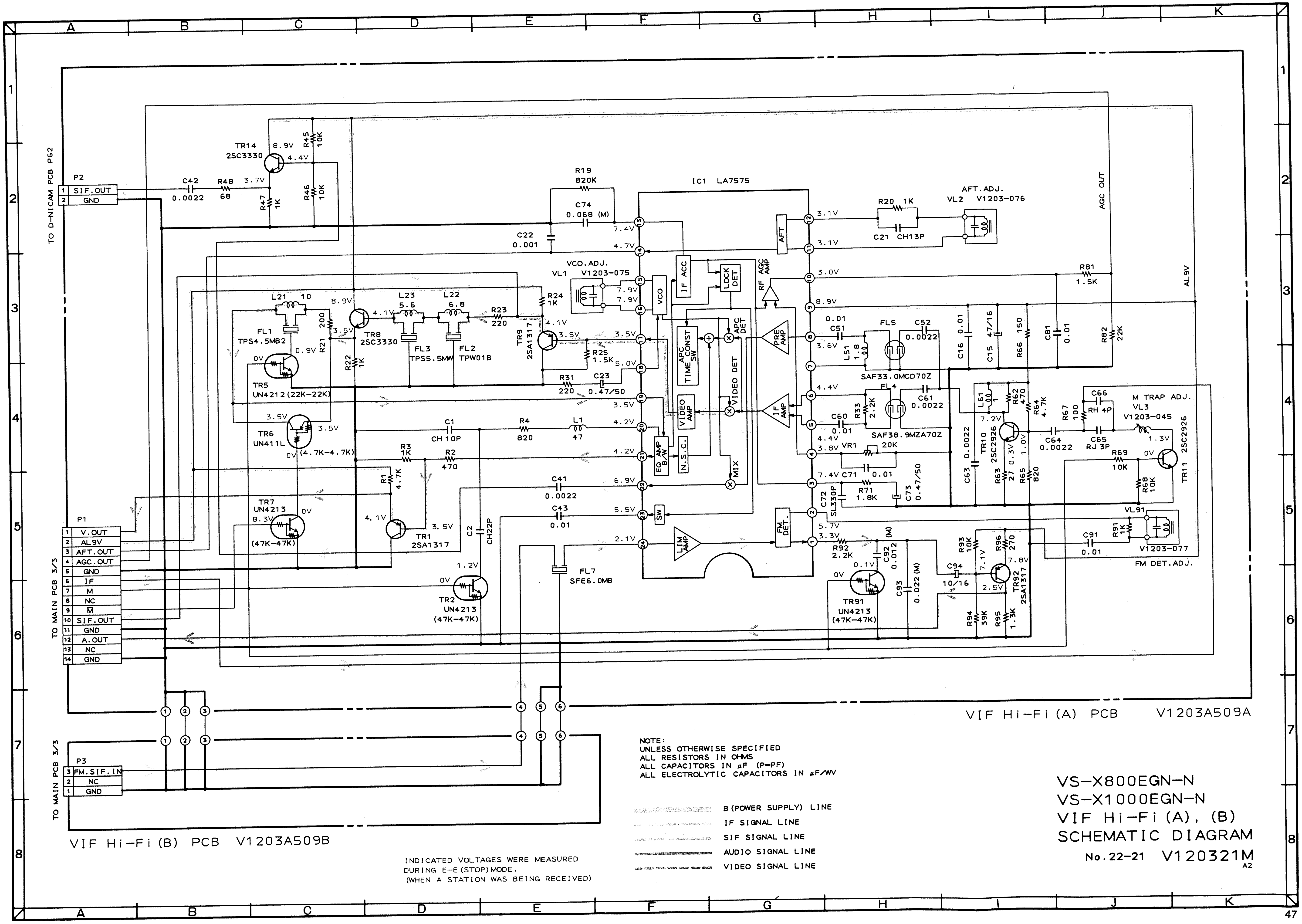
SINGLE CHIP
TRANSISTOR




1
2
3
4
5
6
P3
VR1
R82
R81
C71
R64
L61
R62
R66
C81
C63
VL2
C15
C16
R20
C21
C41
C74
R46
C22
R47
TR14
R45
R19
R48
C42
P2
A
TR10
C64
C52
R63
FL4
FL5
L51
C51
C60
C61
R65
R33
12
13
10
15
5
20
24
IC1
VL1
R23
R25
R24
TR9
FL2
L22
FL3
L23
R22
TR8
VL3
C65
R67
C66
R91
C91
VL91
R92
C43
FL7
L1
R31
C23
R21
TR5
R69
R68
TR91
C92
C93
C94
TR11
R95
TR92
R94
R96
R93
C72
R71
R2
R3
R4
C1
C2
C73
TR1
FL1
L21
B
TR6
TR2
TR7
R1
14
P1
V1203A509A
427372J

VIF Hi-Fi(B) PCB
V1203A509B

VIF Hi-Fi(A) PCB V1203A509A

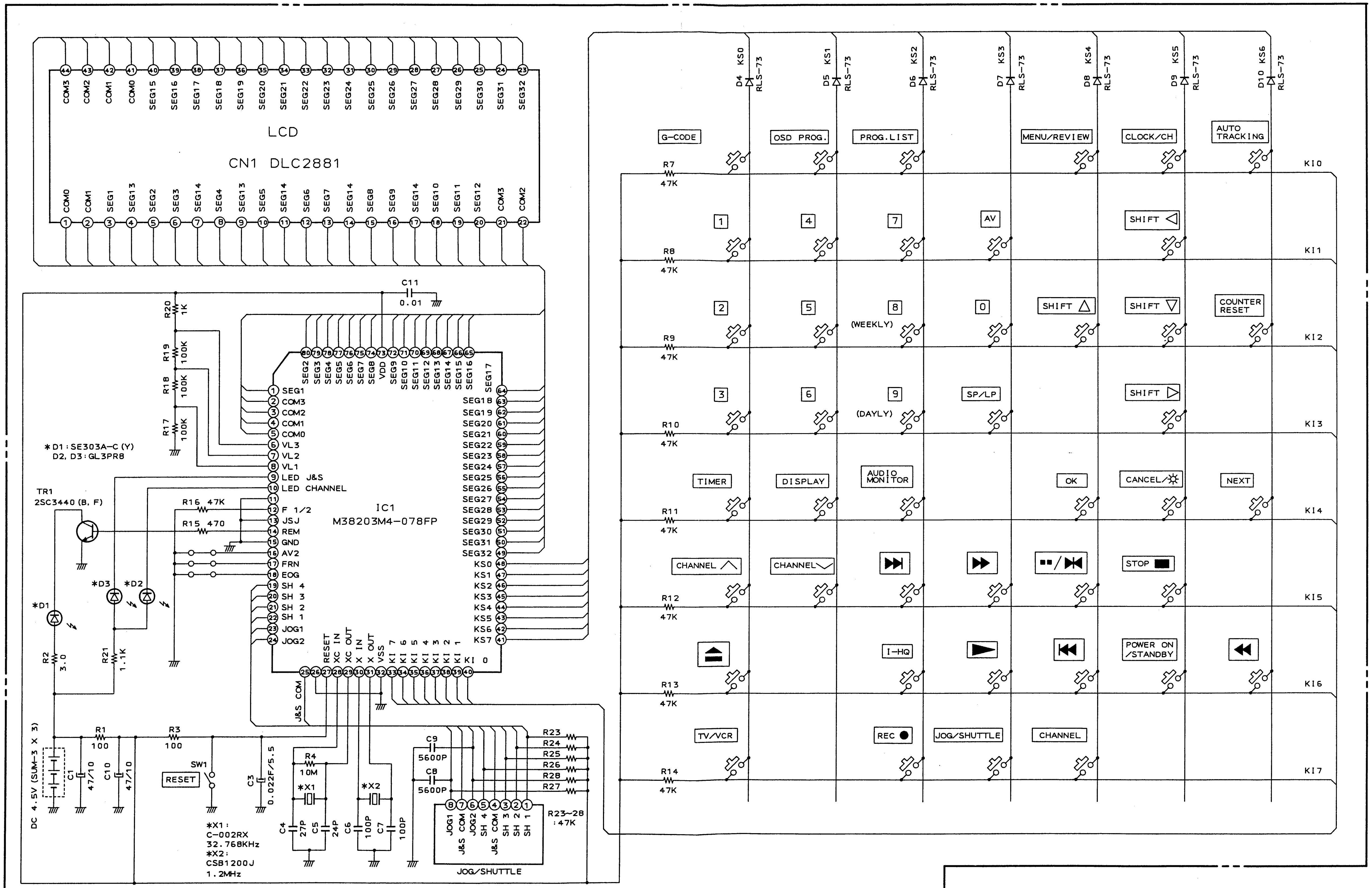

A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
8
TO D-NICAM PCB P62
P2
1 SIF.OUT
2 GND
C42
0.0022
R48
68
3.7V
R47
1K
TR14
2SC3330
8.9V
4.4V
R45
10K
R46
10K
R19
820K
C74
0.068 (M)
C22
0.001
IC1 LA7575
7.4V
4.7V
VCO.ADJ.
VL1 V1203-075
7.9V
7.9V
VCO
IF ACC
LOCK DET
APC TIME CONST SW
APC DET
VIDEO DET
VIDEO AMP
EQ AMP B/W
N.S.C.
MIX
SW
LIM AMP
FM DET.
RF AGC AMP
PRE AMP
IF AMP
AFT
R24
1K
4.1V
3.5V
3.5V
R25
1.5K
5.0V
R31
220
C23
0.47/50
3.5V
4.2V
4.2V
6.9V
5.5V
2.1V
TR9
2SA1317
R23
220
L21 10
L23
5.6
L22
6.8
8.9V
4.1V
FL1
TPS4.5MB2
200
R21
3.5V
0.9V
0V
TR5
UN4212(22K-22K)
TR8
2SC3330
FL3
TPS5.5MW
FL2
TPW01B
R22
1K
3.5V
TR6
UN411L
3.5V
0V (4.7K-4.7K)
C1
CH 10P
R4
820
L1
47
R3
1K
R2
470
R1
4.7K
TR7
UN4213
8.3V
0V
(47K-47K)
4.1V
TR1
2SA1317
3.5V
C2
CH22P
C41
0.0022
C43
0.01
1.2V
0V
TR2
UN4213
(47K-47K)
FL7
SFE6.0MB
P1
1 V.OUT
2 AL9V
3 AFT.OUT
4 AGC.OUT
5 GND
6 IF
7 M
8 NC
9 M̄
10 SIF.OUT
11 GND
12 A.OUT
13 NC
14 GND
TO MAIN PCB 3/3
1
2
3
4
5
6
13
14
15
16
17
18
19
20
21
22
23
24
12
11
10
9
8
7
6
5
4
3
2
1
3.1V
3.1V
3.0V
8.9V
R20 1K
C21 CH13P
AFT.ADJ.
VL2 V1203-076
AGC OUT
AL9V
R81
1.5K
0.01
C51
3.6V
L51
1.8
FL5
C52
0.0022
SAF33.0MCD70Z
C16
0.01
C15
47/16
R66
150
C81
0.01
R82
22K
4.4V
FL4
C61
0.0022
C60
0.01
R33
2.2K
4.4V
SAF38.9MZA70Z
3.8V
VR1
20K
7.4V
C71
0.01
C72
SL330P
R71
1.8K
C73
0.47/50
5.7V
3.3V
L61
1
R62
470
R64
4.7K
7.2V
TR10
2SC2926
0.3V
1.0V
C63
0.0022
R63
27
R65
820
R67
100
C66
RH 4P
C64
0.0022
C65
RJ 3P
M TRAP ADJ.
VL3
V1203-045
1.3V
R69
10K
0V
R68
10K
TR11
2SC2926
R92
2.2K
C92
0.012 (M)
0.1V
0V
TR91
UN4213
(47K-47K)
C93
0.022 (M)
C94
10/16
R93
10K
7.1V
R96
270
7.8V
2.5V
TR92
2SA1317
R94
39K
R95
1.3K
VL91
R91
1K
C91
0.01
V1203-077
FM DET.ADJ.
P3
3 FM.SIF.IN
2 NC
1 GND
TO MAIN PCB 3/3
VIF Hi-Fi (A) PCB V1203A509A
VIF Hi-Fi (B) PCB V1203A509B

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV

B (POWER SUPPLY) LINE
IF SIGNAL LINE
SIF SIGNAL LINE
AUDIO SIGNAL LINE
VIDEO SIGNAL LINE

INDICATED VOLTAGES WERE MEASURED
DURING E-E (STOP) MODE.
(WHEN A STATION WAS BEING RECEIVED)

VS-X800EGN-N
VS-X1000EGN-N
VIF Hi-Fi (A), (B)
SCHEMATIC DIAGRAM
No.22-21 V120321M
A2


LCD
CN1 DLC2881
COM3 COM2 COM1 COM0 SEG15 SEG16 SEG17 SEG18 SEG19 SEG20 SEG21 SEG22 SEG23 SEG24 SEG25 SEG26 SEG27 SEG28 SEG29 SEG30 SEG31 SEG32
COM0 COM1 SEG1 SEG13 SEG2 SEG3 SEG14 SEG4 SEG13 SEG5 SEG14 SEG6 SEG7 SEG14 SEG8 SEG9 SEG14 SEG10 SEG11 SEG12 COM3 COM2
C11 0.01
R20 1K
R19 100K
R18 100K
R17 100K
IC1
M38203M4-078FP
SEG1 COM3 COM2 COM1 COM0 VL3 VL2 VL1 LED J&S LED CHANNEL F 1/2 JSJ REM GND AV2 FRN EOG SH 4 SH 3 SH 2 SH 1 JOG1 JOG2
SEG2 SEG3 SEG4 SEG5 SEG6 SEG7 SEG8 VDD SEG9 SEG10 SEG11 SEG12 SEG13 SEG14 SEG15 SEG16 SEG17
SEG18 SEG19 SEG20 SEG21 SEG22 SEG23 SEG24 SEG25 SEG26 SEG27 SEG28 SEG29 SEG30 SEG31 SEG32 KS0 KS1 KS2 KS3 KS4 KS5 KS6 KS7
RESET XC IN XC OUT X IN X OUT VSS KI 7 KI 6 KI 5 KI 4 KI 3 KI 2 KI 1 KI 0
J&S COM
*D1:SE303A-C(Y)
D2, D3:GL3PR8
TR1
2SC3440(B, F)
R16 47K
R15 470
*D3 *D2 *D1
R2 3.0
R21 1.1K
DC 4.5V (SUM-3 X 3)
R1 100
R3 100
C1 47/10
C10 47/10
SW1
RESET
C3 0.022F/5.5
R4 10M
*X1
*X2
C4 27P
C5 24P
C6 100P
C7 100P
*X1: C-002RX 32.768KHz
*X2: CSB1200J 1.2MHz
C9 5600P
C8 5600P
R23 R24 R25 R26 R28 R27
R23~28 :47K
JOG1 J&S COM JOG2 SH 4 J&S COM SH 3 SH 2 SH 1
JOG/SHUTTLE
D4 KS0 RLS-73
D5 KS1 RLS-73
D6 KS2 RLS-73
D7 KS3 RLS-73
D8 KS4 RLS-73
D9 KS5 RLS-73
D10 KS6 RLS-73
G-CODE
OSD PROG.
PROG.LIST
MENU/REVIEW
CLOCK/CH
AUTO TRACKING
R7 47K
KI0
1
4
7
AV
SHIFT ◁
R8 47K
KI1
2
5
8
(WEEKLY)
0
SHIFT △
SHIFT ▽
COUNTER RESET
R9 47K
KI2
3
6
9
(DAYLY)
SP/LP
SHIFT ▷
R10 47K
KI3
TIMER
DISPLAY
AUDIO MONITOR
OK
CANCEL/☼
NEXT
R11 47K
KI4
CHANNEL △
CHANNEL ▽
▶▶|
▶▶
■■/▶|
STOP ■
R12 47K
KI5
⏏
I-HQ
▶
|◀◀
POWER ON /STANDBY
◀◀
R13 47K
KI6
TV/VCR
REC ●
JOG/SHUTTLE
CHANNEL
R14 47K
KI7

※ THIS SCHEMATIC DIAGRAM IS ONLY FOR REFERENCE.
TO AVOID REPLACING INDIVIDUAL PARTS, REPLACE
THE ENTIRE UNIT ONLY.

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV

RC-W689E
REMOTE CONTROL UNIT
SCHEMATIC DIAGRAM
No.22-22 V120322M
A2

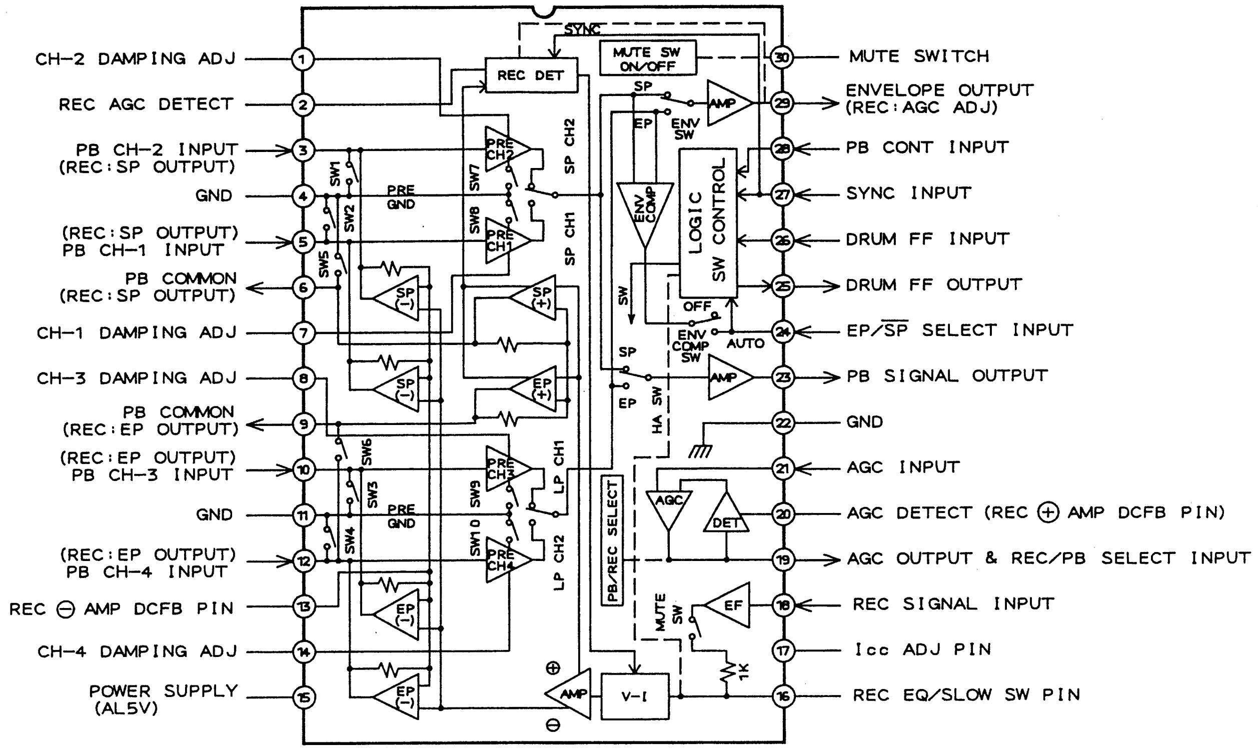
AN3558NFBS (Y/C SIGNAL PROCESSOR)

PIN No.	PORT NAME	I/O	FUNCTION
1	MOD IN	I	REC FM modulator input pin.
2	W/C	–	For white clip level adjustment.
3	MDE OUT	O	Main de-emphasis output pin.
4	MDE PEAK	–	For main de-emphasis peaking control.
5	Vcc (Y)	–	Power supply (for modulator & RF system).
6	REC FM OUT	O	REC FM modulator output pin.
7	DEM GAIN	–	De-modulator gain control pin.
8	PB FM IN	I	PB FM Y signal input pin.
9	ENV DET	–	PB FM Y signal envelope level detect pin.
10	DOP OUT	–	Not used.
11	EE/PB/TRICK	–	EE/PB/TRICK select pin (H : EE, M : PB, L : PB TRICK).
12	SP/LP/EP	–	SP/LP/EP select pin (H : EP, M : LP, L : SP).
13	C-KILL DET	–	Colour killer detect pin (L : killer ON).
14	NC CTL	–	Noise canceller (NLC/NC) control pin.
15	SLD	–	Side lock detect pin.
16	REC/PB	–	REC/PB select pin (H : PB-ID off, M : PB-ID on, L : REC).
17	BGP OUT	O	Burst gate pulse output pin.
18	ROT	I	Chroma rotary pulse input pin.
19	MODE SEL	–	LNC mode select pin (L : edit, M : NOR2, H : NOR1).
20	MUTE DET	–	Mute detect pin (L : mute, H : non mute).
21	RAD	–	REC APC detect pin.
22	GND(C)	–	Ground (for VCO).
23	AFC/APC	–	REC AFC/PB APC detect pin.
24	fVCO	–	VCO frequency adjustment pin.
25	fVCO(PAL)	–	Not used.
26	X'TAL(PAL)	–	X'tal connect pin for PAL.
27	X'TAL(N/P)	–	X'tal connect pin for NTSC or PAL. (commom pin)
28	X'TAL(NTSC)	–	X'tal connect pin for NTSC.
29	Vcc(C)	–	Power supply for VCO, VXO system.
30	Ref FH DET C	–	Chroma filter auto adjust detect pin.
31	2fsc	O	2 fsc output pin.
32	GND(C)	–	Ground for VXO.
33	CACC DET	–	Chroma ACC detect pin.
34	REC C OUT	O	REC chroma signal output pin.
35	FACC DET	–	Field ACC detect pin for CH-2. (OFF when trick mode)
36	ACC DET	–	ACC detect pin.
37	FACC DET	–	Field ACC detect pin for CH-1. (OFF when trick mode)
38	ACC BAL	–	Capacitor connecting pin for ACC balance.
39	3.58/4.43	I	NTSC mode select pin.
40	VCC(C)	–	Power supply (for main chroma).
41	PB RF C IN	I	PB low chroma signal input pin.
42	CNR TEST	I	CNR monitor and on/off pin (ON : 3.4 V, OFF : 3.8 V).
43	GND(C)	–	Ground for chroma system.
44	TEST2	–	Test pin 2.
45	BMC	–	Capacitor connecting pin for BM balance.
46	TEST1	–	Not used.
47	CACC-C	–	Capacitor connecting pin for chroma ACC balance.
48	COMB DRV	O	Driving output for comb filter.
49	C IN TH	I	Chroma signal input pin (direct in).
50	C IN COMB	I	Chroma signal input pin (through the COMB filter).
51	CNR DL	–	Not used.
52	MODE SEL	–	Colour mode select pin (H : MESECAM, M : PAL, L : NTSC).
53	PB C OUT	O	PB chroma signal output pin.
54	Y LPF DET	–	Y LPF fsc detect pin.
55	Y/C MIX	I	PB chroma signal input for Y/C mix.
56	VCC(Y)	–	Power supply for Y signal.
57	V.OUT	O	Composite video signal output pin.
58	AVP	I	Quasi V-sync pulse input pin (H : sync level, M : gray level, L : through).
59	SCL DET	–	Sub clamp detect pin.
60	V.IN	I	Video signal input pin.
61	AGC DET	–	AGC level detect pin.
62	SECAM TH	O	SECAM through output pin.
63	EE ADJ	–	EE video level adjustment pin.
64	HSS OUT	O	H sync separator output pin.
65	SYNC DET	–	Sync separator detect pin.
66	SECAM CLP	I	SECAM clamp input pin.
67	Y LPF OUT	O	Y-LPF output pin.
68	CLP 1 IN	I	Clamp 1 input pin.
69	CLP 2 IN	I	Clamp 2 input pin.
70	CCD IN	O	Output for CCD.
71	YNR DEF	O	YNR diffrential component output pin.
72	CORR DET	I	Correlation detect input pin.
73	GND(Y)	–	Ground for Y signal.
74	CCD AGC DET	–	CCD AGC detect pin.
75	NC LPF	–	LPF pin for Noise Canceller.
76	PICT CTL	–	Picture control pin (L:sharp).
77	NLE/MDE	O	Non linear emphasis / main de-emphasis output pin.
78	CLP 3 IN	I	Clamp 3 input pin.
79	ME FBK	I	Main emphasis feedback input pin.
80	ME OUT	O	Main emphasised signal output pin.

AN3317K (REC/HEAD AMP FOR FM AUDIO)

PIN No.	PORT NAME	I/O	FUNCTION
1	H SW SEL	I	CH-1 and CH-2 head amp select switch control. (H : CH-1, L : CH-2)
2	REC/$\overline{\text{PB}}$ SEL	I	REC/PB select pin. (H : REC, L : PB)
3	REC/$\overline{\text{MUTE}}$ SEL	I	REC/MUTE select pin. (H : REC mode, L : mute)
4	CH1 DUB	–	CH-1 head AMP damping control pin.
5	PB CH1 IN	I	CH-1 PB signal input pin.
6	GND1	–	To be grounded.
7	REC OUT	O	REC signal output pin.
8	PB CH2 IN	I	CH-2 PB signal input pin.
9	CH2 DUB	–	CH2 head AMP damping control pin.
10	REC VCC1	O	+4 V power supply for CH-1 head (REC mode).
11	REC VCC2	O	+4 V power supply for CH-2 head (REC mode).
12	MAIN VCC	–	+5 V power supply of this IC.
13	PEAK DET	–	Capacitor connecting pin for Peak AGC detection.
14	AGC DET	–	Capacitor connecting pin for AGC detection.
15	REC CURR	I	Rec current AMP input pin.
16	PB OUT	O	PB signal output pin.
17	GND2	–	To be grounded.
18	REC AGC	O	REC signal out from AGC circuit.
19	REC LPF	–	Capacitor connecting pin for AGC comparator's LPF.
20	CURR EMPH	–	Current emphasis select pin. (H : over REC, L : normal)
21	REC IN	I	REC FM audio signal input pin.
22	AGC LEVEL	–	AGC level control pin.

AN3386NK-A (4 ch REC/HEAD AMP)


CH-2 DAMPING ADJ ①
REC AGC DETECT ②
PB CH-2 INPUT (REC:SP OUTPUT) ③
GND ④
(REC:SP OUTPUT) PB CH-1 INPUT ⑤
PB COMMON (REC:SP OUTPUT) ⑥
CH-1 DAMPING ADJ ⑦
CH-3 DAMPING ADJ ⑧
PB COMMON (REC:EP OUTPUT) ⑨
(REC:EP OUTPUT) PB CH-3 INPUT ⑩
GND ⑪
(REC:EP OUTPUT) PB CH-4 INPUT ⑫
REC ⊖ AMP DCFB PIN ⑬
CH-4 DAMPING ADJ ⑭
POWER SUPPLY (AL5V) ⑮
㉚ MUTE SWITCH
㉙ ENVELOPE OUTPUT (REC:AGC ADJ)
㉘ PB CONT INPUT
㉗ SYNC INPUT
㉖ DRUM FF INPUT
㉕ DRUM FF OUTPUT
㉔ EP/SP SELECT INPUT
㉓ PB SIGNAL OUTPUT
㉒ GND
㉑ AGC INPUT
⑳ AGC DETECT (REC ⊕ AMP DCFB PIN)
⑲ AGC OUTPUT & REC/PB SELECT INPUT
⑱ REC SIGNAL INPUT
⑰ Icc ADJ PIN
⑯ REC EQ/SLOW SW PIN
SYNC
REC DET
MUTE SW ON/OFF
SP
AMP
EP
ENV SW
ENV COMP
LOGIC SW CONTROL
PRE CH2
PRE CH1
PRE CH3
PRE CH4
SP CH2
SP CH1
LP CH1
LP CH2
SW1
SW2
SW3
SW4
SW5
SW6
SW7
SW8
SW9
SW10
PRE GND
SP
EP
OFF
ENV COMP SW
AUTO
HA SW
AGC
DET
PB/REC SELECT
MUTE SW
EF
1K
AMP
V-I
⊕
⊖

LOGIC SW CONDITION

LOGIC INPUT				INTERNAL SWITCH CONDITION							IC OUTPUT	
PB CONT ㉘ PIN	LP/SP SELECT ㉔ PIN	DRUM FF IN ㉖ PIN	SLOW SW ⑯ PIN	SW1 & SW2 SP INPUT SW	SW3 & SW4 LP INPUT SW	HSW1	HSW2	HASW	ENV COMP SWITCH	ENV SW	PRE OUTPUT	DRUM FF OUT ㉕ PIN
HIGH (MANUAL)	HIGH (LP.MANU)	HIGH	OPEN	ON	OFF	CONTROLLED BY DRUM FF IN (㉖ PIN) HIGH:CH-2 LOW:CH-1	CONTROLLED BY DRUM FF IN (㉖ PIN) HIGH:CH-3 LOW:CH-4	LP SIDE	OFF	LP SIDE	CH 3	LOW
		LOW									CH 4	HIGH
	LOW (SP.MANU)	HIGH		OFF	ON			SP SIDE		SP SIDE	CH 2	
		LOW									CH 1	LOW
TYP. (AUTO)	ENV COMP OUTPUT HIGH /LP1	HIGH			OFF			LP SIDE	AUTO	LP SIDE	CH 3	LOW
		LOW									CH 4	HIGH
	ENV COMP OUTPUT LOW /SP1	HIGH						SP SIDE			CH 2	
		LOW									CH 1	LOW
LOW (STILL & SLOW)	HIGH	HIGH						LP SIDE	OFF		CH 3	LOW
		LOW						SP SIDE			CH 1	
	LOW	HIGH									CH 2	HIGH
		LOW						LP SIDE			CH 4	
	HIGH	HIGH	LOW								CH 3	LOW
		LOW									CH 4	HIGH
	LOW	HIGH						SP SIDE			CH 2	
		LOW									CH 1	LOW

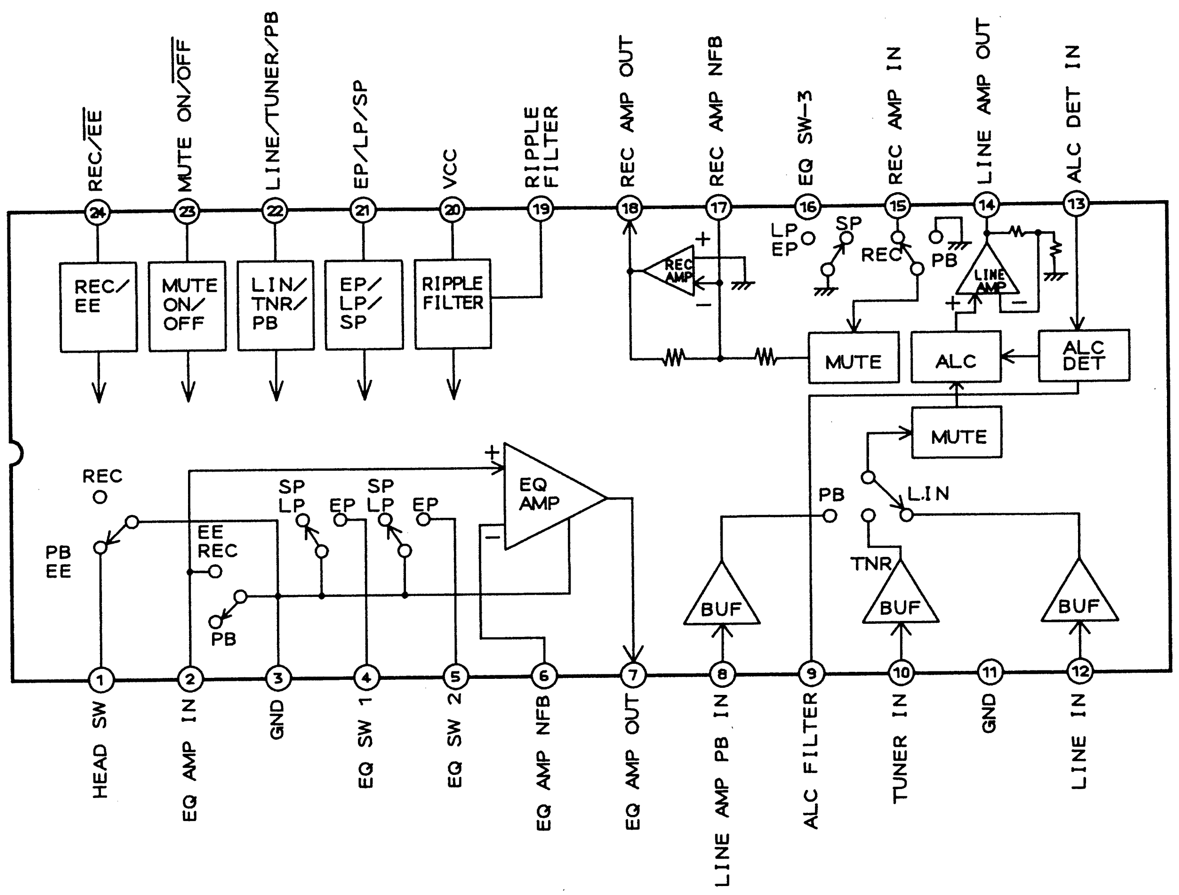
＊ SW5 ~ SW10 : ALWAYS ON WHEN PB MODE

AN3963NFBPA (Hi-Fi & NORMAL AUDIO SIGNAL PROCESSOR)

PIN No.	PORT NAME	I/O	FUNCTION
1	VCC2	–	+12 V power supply.
2	TV IN	I	L-CH TV sound input pin.
3	AUX IN	I	L-CH AUX input pin.
4	BS2 IN	I	L-CH BS-2 input pin.
5	BS1 IN	I	L-CH BS-1 input pin.
6	REC VOL	I	L-CH REC input level adjust pin.
7	AGC DET	–	Stereo AGC detection pin.
8	NR DET 1	–	L-CH NR detect 1 pin.
9	NR DET 2	–	L-CH NR detect 2 pin.
10	GND 1	–	L-CH ground pin.
11	NR REF	–	L-CH NR reference pin.
12	CCA OUT	O	L-CH CCA output pin
13	VREF 1	–	A half voltage of the VCC1 (16 pin).
14	EMPHA NF	–	L-CH emphasis/de-emphasis select pin.
15	HOLD C	–	L-CH hold capacitor connecting pin.
16	VCC 1	–	L-CH +5 V power supply.
17	f0 ADJ	I	L-CH f0 (1.4 MHz) adjust pin.
18	FM OUT/BPF MON	O	L-CH REC FM output and BPF monitor pin
19	ENV.DET	O	Envelope detect pin
20	CS IN	I	Chip select signal input pin from SYSCON MI-COM.
21	CLOCK IN	I	Clock input pin from SYSCON MI-COM.
22	DATA IN	O	Data input pin from SYSCON MI-COM.
23	FORCE	O	Hi-Fi PB signal detect pin. (Hi-Fi : H, Normal : L)
24	GND	–	Ground for logic circuit.
25	PB FM IN	I	PB FM signal input pin.
26	VCC	–	+5 V power supply for logic circuit.
27	DELAYD FF	I	Delayed FF input pin
28	GND	–	Ground for BPF.
29	HOLD TIME C	–	Hold time setting pin
30	NOISE DET	–	Noise detection pin
31	FM OUT/BPF MON	O	R-CH REC FM output and BPF monitor pin.
32	f0 ADJ	–	R-CH f0 adjust pin.
33	VCC 1	–	R-CH +5 V power supply.
34	HOLD-C	–	R-CH hold capacitor pin.
35	EMPHA NF	–	R-CH emphasis/de-emphasis select pin.
36	MUTE CTL	–	Muting control pin
37	CCA OUT	O	R-CH CCA output pin.
38	NF REF	–	R-CH NR reference pin.
39	GND 1	–	R-CH ground pin.
40	NR DET 2	–	R-CH NR detect pin 2.
41	NR DET 1	–	R-CH NR detect pin 1.
42	NOR AGC DET	–	Linear audio AGC detection pin.
43	REC IN VOL	I	R-CH REC input level adjust pin.
44	BS 1 IN	I	R-CH BS 1 input pin.
45	BS 2 IN	I	R-CH BS 2 input pin.
46	AUX IN	I	R-CH AUX input pin.
47	TV IN	I	R-CH TV input pin.
48	NOR REC IN	I	Linear audio REC input pin.
49	NOR PB IN	I	Linear audio PB signal input pin (fH trapped).
50	NOR PB OUT	O	Linear audio PB output pin (fH trapped).
51	NOR PB EQ SW	–	Linear audio PB EQ select pin.
52	NOR PB NF	–	Linear audio PB AMP NF pin.
53	NOR PB IN	I	Linear audio PB signal input pin (Normal head).
54	NOR REC NF	–	Linear audio REC AMP EQ pin.
55	NOR REC OUT	O	REC OUT pin for Linear audio (Normal head).
56	GND	–	Ground
57	RF CONV OUT	O	Audio out pin for RF converter.
58	LINE OUT	O	R-CH line out pin.
59	H/P OUT	O	R-CH out for headphone.
60	GND2	–	Ground
61	H/P OUT	O	L-CH out for headphone.
62	LINE OUT	O	L-CH line out pin.
63	VREF 2	–	A half voltage of the VCC2 (1 pin).
64	H/P OUT VOL	–	Headphone AMP level control pin.

NOTE: NR : noise reduction CCA : current controlled amp

LA7285 (AUDIO SIGNAL REC/PB AMP)


REC/EE
MUTE ON/OFF
LINE/TUNER/PB
EP/LP/SP
VCC
RIPPLE FILTER
REC AMP OUT
REC AMP NFB
EQ SW-3
REC AMP IN
LINE AMP OUT
ALC DET IN
24
23
22
21
20
19
18
17
16
15
14
13
REC/EE
MUTE ON/OFF
LIN/TNR/PB
EP/LP/SP
RIPPLE FILTER
REC AMP
LP
EP
SP
REC
PB
LINE AMP
MUTE
ALC
ALC DET
MUTE
REC
PB EE
EE REC
PB
SP LP
EP
SP LP
EP
EQ AMP
PB
L.IN
TNR
BUF
BUF
BUF
1
2
3
4
5
6
7
8
9
10
11
12
HEAD SW
EQ AMP IN
GND
EQ SW 1
EQ SW 2
EQ AMP NFB
EQ AMP OUT
LINE AMP PB IN
ALC FILTER
TUNER IN
GND
LINE IN

SWITCH FUNCTION

	DC LEVEL		
	0 ~ 1, 0V	1.8 ~ 2.6V	3.6V
㉑PIN	SP	LP	EP
㉒PIN	PB	TUNER	LINE

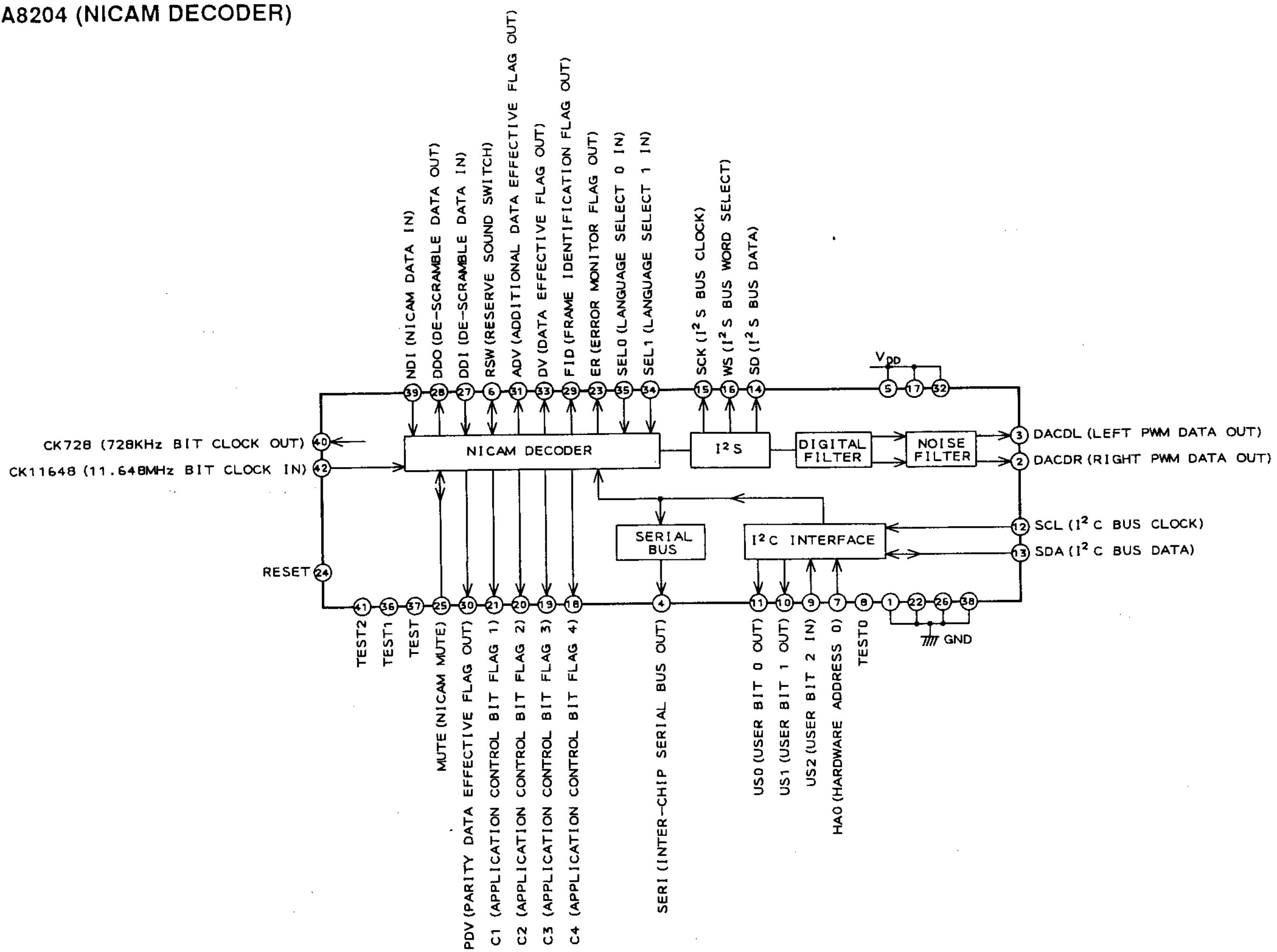
M38173M6 (OPERATION MI-COM)

PIN NO	PORT NAME	I/O	FUNCTION
1	LEVEL L	I	Audio level meter input (L-ch).
2	LEVEL R	I	Audio level meter input (R-ch).
5	OSD STB	O	Chip select output to OSD IC (LC74761).
6	OSD CLK	O	Serial clock output to OSD IC (LC74761).
7	OPE SO-O	O	Serial data output to OSD IC (LC74761).
9	SYS RDY	I	Syscon transfer ready signal input.
10	SYS CLK	O	Serial clock output to syscon MI-COM.
11	OPE SO	O	Serial data out to syscon MI-COM.
12	OPE SI	I	Serial data in from syscon MI-COM.
14	ASSIST POW	O	Door motor speed control output.
15	FLD OPEN H	O	Door motor drive output.
16	FLD OPEN L	O	(H & H : stop, H & L : open, L & H : close)
17	D/A PWM	O	FLD filament power supply on/off control. (off : H, on : 62.5 kHz square wave)
20	T1 OUT	O	1/2 counted down square waveform signal output of timer 1.
21	FL SW 1	I	Cassette door close detect switch input. (H : open, L : close)
22,23	FL SW2,3	I	Cassette door's gear position detect switch input.
24	FL SW 4	I	Cassette tape detect switch input. (H : inserted, L : empty)
25	RESET OUT	O	Reset signal output to syscon MI-COM.
26	REMOCON	I	Remote control signal input.
27	RESET IN	I	Reset signal input.
28	XC IN	I	Sub clock (32.768 kHz) input/output.
29	XC OUT	O	
30	XC IN	I	Main clock (6.0 MHz) input/output.
31	XC OUT	O	
32	VSS	–	Ground
41 ~ 54	T0 ~ 13	O	FLD digit data output.
57 ~ 69	S0 ~ 12	O	FLD segment data output.
70	MIC IN	I	MIC switch input. (H : MIC in)
72	P.DOWN	I	Power down detect input.
73	VCC	–	+5 V power supply.
74	VEE	–	–30 V power supply for pulled down.
75	AVSS	–	Ground for A/D converter.
76	VREF	I	A/D converter reference voltage input. (+5 V)
77 ~ 80	KEY1 ~ 4	I	Key input. (A/D input)

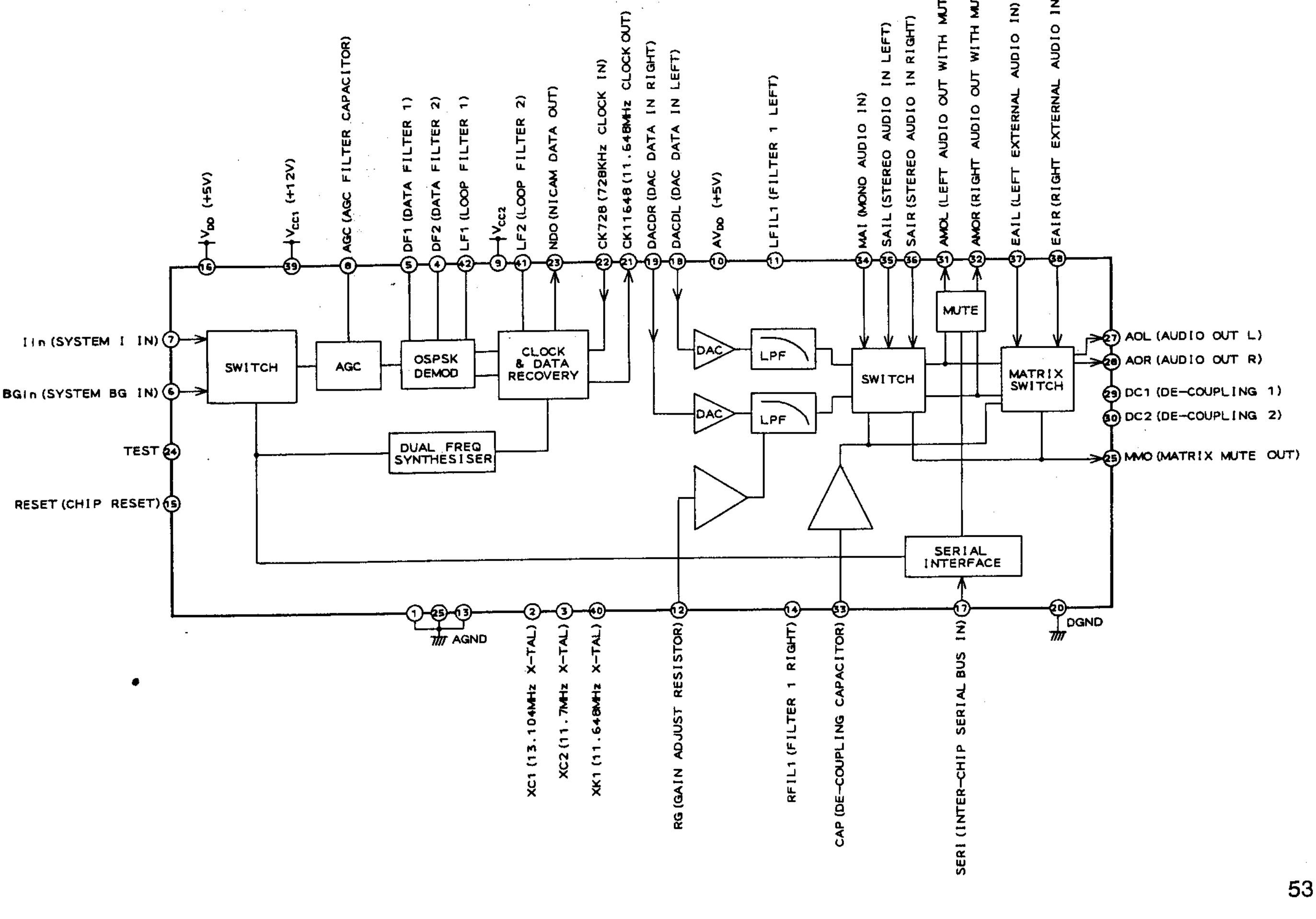
M37770E4HFP (SERVO/SYSCON MI-COM)

PIN No.	PORT NAME	I/O	FUNCTION
1,35,84	VCC	–	+5 V power supply.
2	FLY.ES	O	Flying erase OSC control output.
3	Vss	–	To be ground
4	TRP	I	Take up reel pulse input
5	SRP	I	Supply reel pulse input.
6	SEC.MES	O	SECAM & MESECAM select output. (PAL : L)
7	NTSC	O	NTSC mode select output. (NTSC : L)
8	C.SYNC	I	Cmposite sync input. (for video judge)
9	SP	O	Tape speed judge output. (except SP : H)
10,50 74,103	VSS	–	Ground.
11	EE	O	EE line control pin.
12	VP	O	Quasi V pulse signal output.
13	V.R.MUTE	O	Video REC mute control
14	REC.S	O	REC start control output. (real time output)
15	V.SWP	O	Video head switching pulse.
17	A.SWP	O	Hi-Fi head switching pulse output
18	A.OSC	O	Linear audio bias OSC on/off control.
19	A.REC	O	Linear audio REC/PB control
20	A.EE	O	Audio EE control pin. • VS-X480EGN
	A.REC.H	O	REC/PB select control output for Hi-Fi audio section. (L: Hi-Fi REC) • VS-X800,X1000EGN-N
21	A.REC/MUTE	O	Rec mute control output for Hi-Fi audio section. (L: mute)
22	Hi-Fi DET	I	Hi-Fi/normal detect input. (Hi-Fi : L)
24	3NT	O	NTSC (3.58) mode control.
25	S.DET CTL	O	PB colour system control output pin. (PAL / SECAM / MESECAM)
26	C.DET OFF	O	Control for turning chroma level detection off.
27	F.E	O	Full track erase OSC control output.
28	4NT	O	NTSC (4.43) mode control
29	REC SAF	I	REC safety sw input. (L: REC enable)
30	S.PACK	I	S-VHS tape detect switch input. (H : S-VHS tape)
31~ 34	RSW1~ 4	I	Input from the rotary (mecha. position detect) switch.
36	SLOW PB	O	Head select switch control when trick mode. (L: normal PB, H : trick mode)
37	PB	O	PB mode control pin.
38	TRQUP	O	Loading motor torque control.
39	LM F	O	Loading motor direction control (forward).
40	LM R	O	Loading motor direction control (reverse).
41	Hi-Fi CS	O	Chip select output for Hi-Fi audio IC
42	Hi-Fi CLK	O	Clock output for Hi-Fi audio IC
43	Hi-Fi DATA	O	Data output for Hi-Fi audio IC
44	NUB	–	To be grounded.
45	NUA	–	To be grounded.
46	RESET	I	Reset input.
47	X IN	I	X'tal osc input (f = 16 MHz).
48	X OUT	O	X'tal osc output (f = 16 MHz).
49	CLK SEL	I	Clock select input. (L: requires sub clock)
53	INT/EXT	O	Input select control output.
54	AV1/AV2	O	AV1/AV2 external input selection control output. (L: AV1)
55	L	O	Tuner system control.
56	I² C SDA	I/O	I² C bus serial data in/out.
57	I² C SCL	O	I² C bus serial clock in/out.
58	A.MUTE	O	Audio mute control. (H : mute)
59	T.MUTE	O	Tuner mute control. (H : mute)
60	I	O	Tuner system control.
61	M	O	Tuner system control.
62	AFT-L	I	AFT low level judge input.
63	AFT-H	I	AFT high level judge input.
64	AFT	O	AFT on/off control output. (L: AFT on)
68	BAND B	O	Tuner band select output.
69	BAND A	O	Tuner band select output.
70	HS	O	Capstan motor high speed control. (FF & RWD : L)
71	F/R	O	Capstan motor direction control. (H : reverse)
72	CTL GAIN	O	CTL signal level control output. (FF & RWD : "L")
73	CM STOP	O	Capstan motor stop control. (H : motor stop)
77	AL	O	AL power supply line control output.
78	CTL RET	O	PB CTL reset control out
79	SYS SO	O	Serial data out to OPE MI-COM.
80	SYS SI	I	Serial data in from OPE MI-COM.
81	SYS CLK	I	Serial clock input from OPE MI-COM.
82	SYS RDY	O	Data transfer ready output to OPE MI-COM.
83	SHORT	I	Power supply abnormal condition detect input. (L : REG voltage is too high.)
85	AMP VCC	–	+5 V power supply for analog AMP.
86	AMP VREF	–	Voltage reference for analog AMP.
87	CLAMPR	I	CTL clamp AMP negative input.
88	CLAMPF	I	CTL clamp AMP positive input.
89	AMPC	–	Load capacitor connecting pin for CTL AMP.
90	CTLAMP OUT	O	CTL AMP output.
91	CTLAMP IN	I	CTL AMP input.
92	CTL+SWOUT	O	CTL internal sw control.
93	CTL+	I	CTL positive side input.
94	CTL–	I	CTL negative side input.
95	C	–	Capacitor connecting pin for REC CTL signal's trapezoid wave.
96	CP FG	I	Capstan motor FG signal input.
97	DM FG	I	Drum motor FG signal input.
98	DM PG	I	Drum motor PG signal input.
99	AMP VSS	–	Ground for analog system (FG, PG & CTL AMP).
100	A.VCC	–	+5 V power supply (for analogue system circuit).
102	VREF	–	Servo voltage reference.
104	C.KILL	I	NTSC (4.43 / 3.58) colour system control input.
106	PICT	O	Picture quality control output. (D/A)
107	ANC.VOL	O	Noise cancel value output. (D/A)
108	Hi-Fi ENV	I	Hi-Fi envelope detect signal input for auto tracking
109	LNC	O	Line noise canceller control (L/M/H).
110	B/W SEC	O	Black & white / SECAM swithing.
111	E/P/T	O	EE/PB/TRICK mode select control (L/M/H).
112	ES	I	End sensor input.
115	S.DET OUT	I	Colour system control input. (PAL / SECAM / MESECAM)
116	SS	I	Start sensor input.
117	CT DET	I	Cross talk detection voltage input for auto tracking.
118	TUNE	O	Tuning output for I-HQ system (L,M & H).
119	ENV.DET	I	Video envelope detect input.
120	V.SYNC IN	I	V.SYNC input.
121	HEAD CTL	O	Video head select control output when trick mode.
122	NP	O	Color system convert control out (NTSC to PAL : L)
126	TUNER PWM	O	Tuning voltage output for tuner.
127	CM PWM	O	Speed & phase error output for capstan motor.
128	DM PWM	O	Speed & phase error output for drum motor.

TDA8204 (NICAM DECODER)

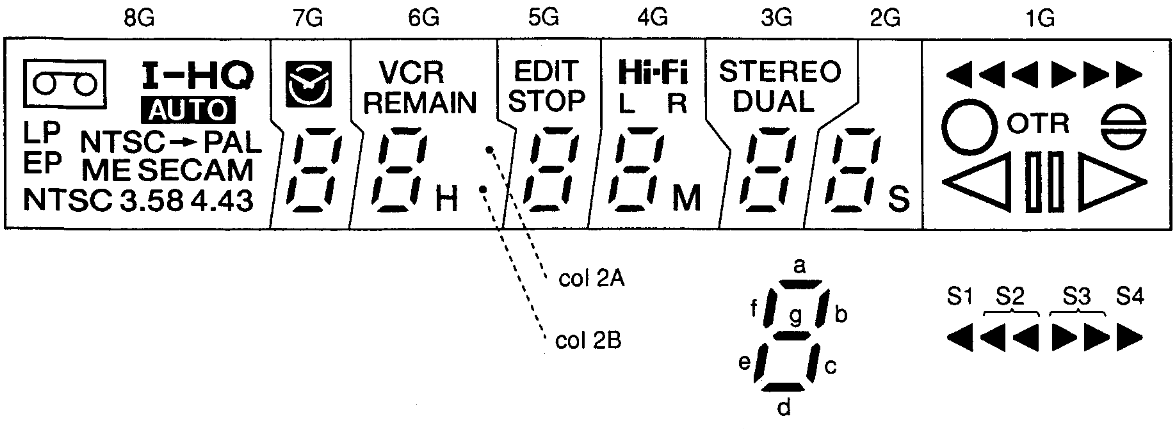

NDI (NICAM DATA IN)
DDO (DE-SCRAMBLE DATA OUT)
DDI (DE-SCRAMBLE DATA IN)
RSW (RESERVE SOUND SWITCH)
ADV (ADDITIONAL DATA EFFECTIVE FLAG OUT)
DV (DATA EFFECTIVE FLAG OUT)
FID (FRAME IDENTIFICATION FLAG OUT)
ER (ERROR MONITOR FLAG OUT)
SEL0 (LANGUAGE SELECT 0 IN)
SEL1 (LANGUAGE SELECT 1 IN)
SCK (I²S BUS CLOCK)
WS (I²S BUS WORD SELECT)
SD (I²S BUS DATA)
VDD
39
28
27
6
31
33
29
23
35
34
15
16
14
5
17
32
CK728 (728KHz BIT CLOCK OUT) 40
CK11648 (11.648MHz BIT CLOCK IN) 42
NICAM DECODER
I²S
DIGITAL FILTER
NOISE FILTER
3 DACDL (LEFT PWM DATA OUT)
2 DACDR (RIGHT PWM DATA OUT)
SERIAL BUS
I²C INTERFACE
12 SCL (I²C BUS CLOCK)
13 SDA (I²C BUS DATA)
RESET 24
41
36
37
25
30
21
20
19
18
4
11
10
9
7
8
1
22
26
38
GND
TEST2
TEST1
TEST
MUTE (NICAM MUTE)
PDV (PARITY DATA EFFECTIVE FLAG OUT)
C1 (APPLICATION CONTROL BIT FLAG 1)
C2 (APPLICATION CONTROL BIT FLAG 2)
C3 (APPLICATION CONTROL BIT FLAG 3)
C4 (APPLICATION CONTROL BIT FLAG 4)
SERI (INTER-CHIP SERIAL BUS OUT)
US0 (USER BIT 0 OUT)
US1 (USER BIT 1 OUT)
US2 (USER BIT 2 IN)
HA0 (HARDWARE ADDRESS 0)
TEST0

TDA8205 (QPSK DEMODULATOR)


VDD (+5V)
VCC1 (+12V)
AGC (AGC FILTER CAPACITOR)
DF1 (DATA FILTER 1)
DF2 (DATA FILTER 2)
LF1 (LOOP FILTER 1)
VCC2
LF2 (LOOP FILTER 2)
NDO (NICAM DATA OUT)
CK728 (728KHz CLOCK IN)
CK11648 (11.648MHz CLOCK OUT)
DACDR (DAC DATA IN RIGHT)
DACDL (DAC DATA IN LEFT)
AVDD (+5V)
LFIL1 (FILTER 1 LEFT)
MAI (MONO AUDIO IN)
SAIL (STEREO AUDIO IN LEFT)
SAIR (STEREO AUDIO IN RIGHT)
AMOL (LEFT AUDIO OUT WITH MUTE)
AMOR (RIGHT AUDIO OUT WITH MUTE)
EAIL (LEFT EXTERNAL AUDIO IN)
EAIR (RIGHT EXTERNAL AUDIO IN)
16
39
8
5
4
42
9
41
23
22
21
19
18
10
11
34
35
36
31
32
37
38
Iin (SYSTEM I IN) 7
BGIn (SYSTEM BG IN) 6
TEST 24
RESET (CHIP RESET) 15
SWITCH
AGC
OSPSK DEMOD
CLOCK & DATA RECOVERY
DUAL FREQ SYNTHESISER
DAC
LPF
DAC
LPF
SWITCH
MUTE
MATRIX SWITCH
SERIAL INTERFACE
27 AOL (AUDIO OUT L)
28 AOR (AUDIO OUT R)
29 DC1 (DE-COUPLING 1)
30 DC2 (DE-COUPLING 2)
25 MMO (MATRIX MUTE OUT)
1
25
13
AGND
2
3
40
12
14
33
17
20
DGND
XC1 (13.104MHz X-TAL)
XC2 (11.7MHz X-TAL)
XK1 (11.648MHz X-TAL)
RG (GAIN ADJUST RESISTOR)
RFIL1 (FILTER 1 RIGHT)
CAP (DE-COUPLING CAPACITOR)
SERI (INTER-CHIP SERIAL BUS IN)

FLD FV662G

GRID ASSIGNMENT



8G
7G
6G
5G
4G
3G
2G
1G
I-HQ
AUTO
LP
EP
NTSC→PAL
ME SECAM
NTSC 3.58 4.43
VCR
REMAIN
H
EDIT
STOP
Hi·Fi
L R
M
STEREO
DUAL
S
OTR
col 2A
col 2B
a
b
c
d
e
f
g
S1 S2 S3 S4

(2G~7G)

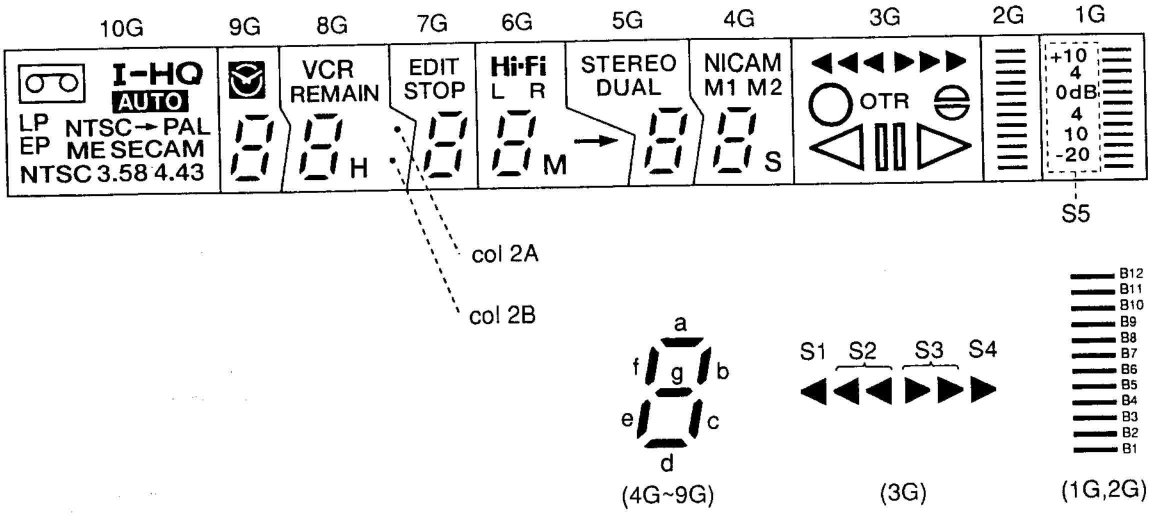
(1G)

INTERNAL CONNECTION

	8G	7G	6G	5G	4G	3G	2G	1G
P1	3.58	—	H	—	M	—	S	○
P2	4.43	—	col 2B	—	—	—	—	⊖
P3	—	—	—	—	—	—	—	S4
P4	SECAM	—	col 2A	—	L	—	—	S1
P5	PAL	—	REMAIN	STOP	R	DUAL	—	S2
P6	AUTO	⏲	VCR	EDIT	Hi·Fi	STEREO	—	S3
P7	ME	a	a	a	a	a	a	OTR
P8	NTSC	b	b	b	b	b	b	◁
P9	EP	f	f	f	f	f	f	▮▯
P10	LP	g	g	g	g	g	g	▯▮
P11	📼	c	c	c	c	c	c	▷
P12	NTSC→	e	e	e	e	e	e	—
P13	I-HQ	d	d	d	d	d	d	—

FLD FV663G

GRID ASSIGNMENT

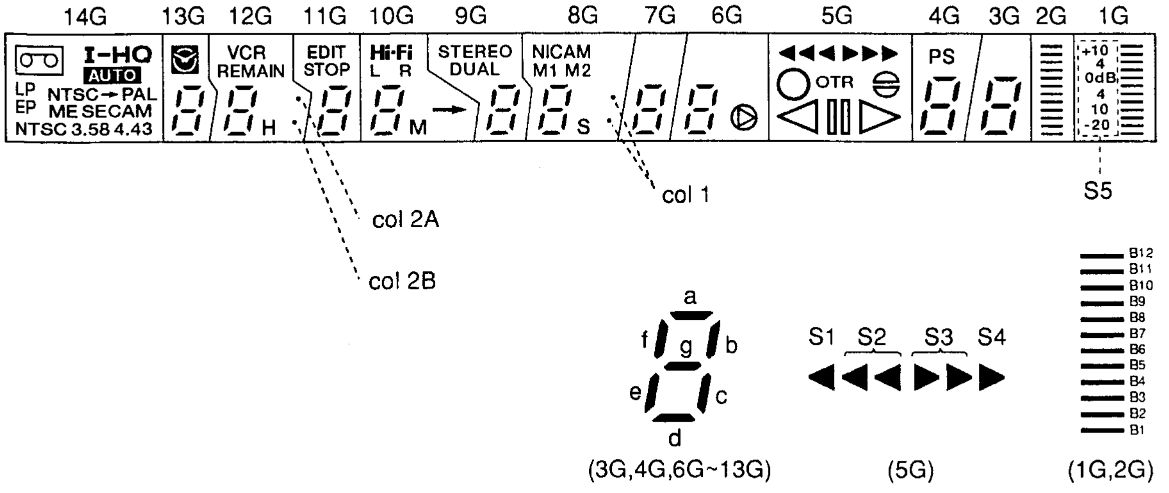

10G
9G
8G
7G
6G
5G
4G
3G
2G
1G
I-HQ
AUTO
LP
EP
NTSC→PAL
ME SECAM
NTSC 3.58 4.43
VCR
REMAIN
H
EDIT
STOP
Hi·Fi
L R
M
STEREO
DUAL
NICAM
M1 M2
S
OTR
+10
4
0dB
4
10
-20
S5
col 2A
col 2B
a
f
g
b
e
c
d
S1
S2
S3
S4
B12
B11
B10
B9
B8
B7
B6
B5
B4
B3
B2
B1
(4G~9G)
(3G)
(1G,2G)

INTERNAL CONNECTION

	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	3.58	—	H	—	M	—	S	○	—	S5
P2	4.43	—	col 2B	—	→	—	—	⊜	B12	B12
P3	—	—	—	—	—	—	—	S4	B11	B11
P4	SECAM	—	col 2A	—	L	—	M1	S1	B10	B10
P5	PAL	—	REMAIN	STOP	R	DUAL	M2	S2	B9	B9
P6	AUTO	⌚	VCR	EDIT	Hi·Fi	STEREO	NICAM	S3	B8	B8
P7	ME	a	a	a	a	a	a	OTR	B7	B7
P8	NTSC	b	b	b	b	b	b	◁	B6	B6
P9	EP	f	f	f	f	f	f	▯	B5	B5
P10	LP	g	g	g	g	g	g	▯	B4	B4
P11	▭	c	c	c	c	c	c	▷	B3	B3
P12	NTSC→	e	e	e	e	e	e	—	B2	B2
P13	I-HQ	d	d	d	d	d	d	—	B1	B1

FLD FV664G

GRID ASSIGNMENT


14G
13G
12G
11G
10G
9G
8G
7G
6G
5G
4G
3G
2G
1G
I-HQ
AUTO
LP
EP
NTSC→PAL
ME SECAM
NTSC 3.58 4.43
VCR
REMAIN
EDIT
STOP
Hi·Fi
L R
STEREO
DUAL
NICAM
M1 M2
H
M
S
OTR
PS
+10
4
0dB
4
10
-20
col 1
col 2A
col 2B
S5
a
b
c
d
e
f
g
S1
S2
S3
S4
B12
B11
B10
B9
B8
B7
B6
B5
B4
B3
B2
B1

(3G,4G,6G~13G) (5G) (1G,2G)

INTERNAL CONNECTION

	14G	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	3.58	—	H	—	M	—	S	—	⊳	○	—	—	—	S5
P2	4.43	—	col 2B	—	→	—	col 1	—	—	⊜	—	—	B12	B12
P3	—	—	—	—	—	—	—	—	—	S4	—	—	B11	B11
P4	SECAM	—	col 2A	—	L	—	M1	—	—	S1	—	—	B10	B10
P5	PAL	—	REMAIN	STOP	R	DUAL	M2	—	—	S2	—	—	B9	B9
P6	AUTO	⏲	VCR	EDIT	Hi·Fi	STEREO	NICAM	—	—	S3	PS	—	B8	B8
P7	ME	a	a	a	a	a	a	a	a	OTR	a	a	B7	B7
P8	NTSC	b	b	b	b	b	b	b	b	◁	b	b	B6	B6
P9	EP	f	f	f	f	f	f	f	f	▮	f	f	B5	B5
P10	LP	g	g	g	g	g	g	g	g	▮	g	g	B4	B4
P11	📼	c	c	c	c	c	c	c	c	▷	c	c	B3	B3
P12	NTSC→	e	e	e	e	e	e	e	e	—	e	e	B2	B2
P13	I-HQ	d	d	d	d	d	d	d	d	—	d	d	B1	B1

ABBREVIATIONS (VIDEO)

ABBREVIATION	EXPLANATION
A	Audio or Analogue
AC	Alternating Current
ACC	Automatic Color Control
A/C	Audio and Control
ADJ	ADJust (ment)
AFC	Automatic Frequency Control
AFT	Automatic Fine Tuning
AGC	Automatic Gain Control
AH	Audio Head
AL	ALways (voltage)
ALC	Automatic Level Control
A-SW.P	Audio SWitching Pulse
A-MUTE	Audio MUTE
ANT	ANTenna
APC	Automatic Phase Control
ASSY	ASSemblY
BAL	BALance
B DOWN	Break DOWN
BGP	Burst Gate Pulse
BLK	BLocK or BLacK
BOP	Blank Output Pulse
BPF	Band Pass Filter
BU	Back Up (voltage)
B/W	Black and White
C	Chroma or Color
CCD	Charge Coupled Device
CCIR	Comit Consultatif International des Radio communications
CH (ch)	CHannel (channel)
CLK	CLocK
CM	Capstan Motor
CN	CoNnector
COMP	COMParator
CSW	Cassette SWitch
CSYNC	Composite SYNC
CTL	ConTrol
CUE	CUE
DAC	Digital to Analog Converter
DC	Direct Current
DEMOD	DEMODulator
DET	DETetct (DETector)
DL	Delay Line
DM	Drum Motor
DOC	Drop Out Compensator
D.P.E	Drum Phase Error
D.PG	Drum Pulse Generator
EE	Electronic to Electronic
EF	Emitter Follower
EMPHA	EMPHAsis
ENV	ENVelope
EP	Extended Play
EP ROM	Erasable Programmable ROM
EQ	EQualizer
FE	Full track Erase
FF	Flip-Flop or Fast Foward
FG	Frequency Generator
Fig	Figure
FLD	FLuorescent Display
FM	Frequency Modulation
Fo	resonance Frequency
FREQ	FREQuency
GND	GrouND
H	Horizontal
HP	Horizontal (sync) pulse
HPF	High Pass Filter
HQ	High Quality System
IC	Integrated Circuit
ID	IDentification
IDL	IDLe (Voltage)
IMS	Interactive Monitor System
INS	INSert
INV	INVerter
L	Left
LED	Light Emitting Diode
LIM	LIMitter
LM	Loading Motor
LM STP	Loading Motor STop
LP	Long Play
LPF	Low Pass Filter
ME-SECAM	Middle East SECAM
MI-COM	MIcro COMputer
MM	Mono-stayble Multi
MOD	MODulator
MRS	Motor ReverSe
NAP	NtscAmusement Pal
NG	Noise Gate
NICAM	Near Instanteneous CompandAudio Multiplex
NON-LIN	NON-LINear
N.T.S.C.	National Television System Committee
OSC	OSCillator
PAL	Phase Alternation by Line
PB	Play Back
PCB (P.C.B)	Printed Circuit Board
P-COM	Phase-COMparator
P DOWN	Power DOWN
PG	Pulse Generator
P.I.P	Picture In Picture
PL, PLG	PLunger (PLunGer)
PRG (PGM)	PRoGram (ProGraM)
PU	Pick UP (head, pulse)
PWR	PoWeR
Q	Quality factor
R	Right
RAM	Random Access Memory
REC	RECord
REF	REFerence
REF-V	REFerence Vertical signal
REG	REGulator
REV (REVW)	REView (REVieW)
REW	REWind
RF	Radio Frequency
ROM	Read Only Memory
R.S SW	Record-Safety SWitch
RST (RES)	ReSet (RESet)
RVS	ReVerSe
S	Sensor, Shield
SAW	Surface Acoustic Wave
SC	SimulCast
S CLK	Serial CLocK
SECAM	SÉquentiel Couleur À Mémoire
S & H	Sample and Hold
SLP	Super Long Play
SP	Standard Play
SPD	SPeeD
SRP	Supply Reel Pulse
SRV	SeRVo
SOW	Sync On Word
STBY	STandBY
S.VHS	Super VHS
SW	SWitch
SW'NG	SWitchiNG
SWP	SWitching Pulse
SYNC	SYNChronize
T-AUDIO	Tuner AUDIO
TPZ (TRAPE)	TraPeZoid (TRAPEzoid)
TRK	TRacKing
TRP	Take up Reel Pulse
T/U	Take Up
TV	TeleVision
UHF	Ultra High Frequency
UNR	UNRegulated (voltage)
V	Vertical or Video
VASS	Video Address Search System
VCO	Voltage Controlled Oscillator
VH	Video Head
VHF	Very High Frequency
VHS	Video Home System
VIF	Video Intermediate Frequency
VISS	Video Index Search System
VJ	Video Judge
VM	Voltage for Memory
VOB	Video On Blank
VOW	Video On Word
VP	Vertical (sync) Pulse
VPS	Video Program System
VPT	Video Programming by video Text
VT	Voltage for Tuning
WHT	WHiTe
Y	Luminance
2H	2 Hour (SP)
4H	4 Hour (LP)
6H	6 Hour (SLP/EP)